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### 1978 - 1979 Bulletin

Loma Linda University

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**college of arts & sciences**

**LOMA LINDA UNIVERSITY 1978-79**

**LOMA LINDA UNIVERSITY College of Arts & Sciences 1978-79**

The information in this BULLETIN  
is made as accurate as is possible  
at the time of publication. The  
student is responsible for informing  
himself of and satisfactorily meeting  
all requirements pertinent to his  
relationship with the University.

The University reserves the right  
to make such changes as circumstances  
demand with reference to admission,  
registration, tuition and fees,  
attendance, curriculum requirements,  
conduct, academic standings,  
candidacy, and graduation.

#### GENERAL OFFICE HOURS

Records/Student Finance  
9 to 12 Monday-Friday  
1 to 3 Monday-Thursday

Administration  
8 to 12 Monday-Friday  
1 to 5 Monday-Thursday

School of Education  
8 to 12 Monday-Friday  
1 to 5 Monday-Thursday  
And by appointment

CLOSED  
Saturday, Sunday  
legal holidays

BULLETIN OF  
LOMA LINDA UNIVERSITY  
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**arts &  
sciences**

**LOMA LINDA UNIVERSITY**

**1978-79**

## CONTENTS

The University, 5  
Calendar, 6

### I

The College of Arts and Sciences, 11  
Admission Information, 18  
Academic Policies and Practices, 22  
Financial Information, 27  
Student Affairs, 38

### II

General Requirements, 43  
Departments of Instruction, 48  
Agriculture, 50  
Art, 55  
Behavioral Sciences, 59  
Biology, 80  
Business and Economics, 89  
Chemistry, 95  
Communication, 99  
Consumer Related Sciences, 108  
English, 116  
History and Political Science, 120  
Industrial Studies, 127  
Mathematics, 133  
Modern Languages, 138  
Music, 145  
Physical Education, Health, and Recreation, 152  
Physics, 158  
Religion, 162  
Secretarial and Business Education, 172  
Interdepartmental Courses, 176

### III

The Trustees, 181  
The University Administration, 181  
The College of Arts and Sciences, 184  
Alumni Federation, 189  
Accreditation, 190  
Instructional Resources, 191  
College of Arts and Sciences Information, 198  
University Information, 199



LOMA LINDA UNIVERSITY is a two-campus Seventh-day Adventist coeducational institution located in inland Southern California and is part of the Seventh-day Adventist system of higher education.

On the La Sierra campus, at the west edge of Riverside, curriculums in applied and liberal arts and sciences, and programs in professional education in fulfillment of requirements for teaching credentials are offered by the College of Arts and Sciences and the School of Education. On the Loma Linda campus, in the San Bernardino-Redlands area, professional curriculums are offered by the Schools of Allied Health Professions, Dentistry, Health, Medicine, and Nursing. Graduate programs of the departments of the schools are offered from both campuses through the Graduate School.

Accredited by the Western Association of Schools and Colleges, Loma Linda University is a member of the American Council on Education, the Association of American Colleges, and the Association of Seventh-day Adventist Colleges and Secondary Schools. The professional curriculums of the University are approved by their respective professional organizations.

Curriculums are offered leading to the Associate in Science, Associate in Arts, Bachelor of Music, Bachelor of Social Work, Bachelor of Science, Bachelor of Arts, Master of Science in Public Health, Doctor of Dental Surgery, Doctor of Medicine, Master of Public Health, Doctor of Health Science, Master of Science, Master of Arts, Specialist in Education, and Doctor of Philosophy degrees.

The core of the combined faculties consists of approximately 575 full-time teachers. Part-time and voluntary teachers, especially clinicians in the professional curriculums, bring the total past 1,500. Men and women from as many as eighty nations are represented in the annual enrollment of over 5,000 students.

Loma Linda University selects its students without discrimination based on race, color, sex, national origin, age, ancestry, or handicap. It does, however, retain the right to give preference in student admissions to qualified Seventh-day Adventist students. While this right is retained, it should be emphasized that the admission of students is not limited exclusively to Seventh-day Adventist applicants.

# 1978

## CALENDAR

### June

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

18  
19  
23

### SUMMER SESSION 1978

Registration  
Beginning of classes and laboratories  
Last day to enter a course

### July

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

4  
28

Independence Day recess  
End of six-week courses

### August

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

10

End of eight-week courses

Information concerning workshops, institutes,  
and other special courses appears in the  
Summer Session BULLETIN

### September

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

24  
25  
26  
27

### AUTUMN QUARTER 1978

Testing and orientation  
Advisement and registration for all new students  
Registration for all former students  
Beginning of classes and laboratories

### October

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

10  
16-21

Last day to enter a course  
Autumn Week of Devotion

### November

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

2

Midterm; last day to drop a course with no transcript record

22-26

Thanksgiving recess

### December

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

11-14  
14

Final examinations  
End of autumn quarter



# 1979

## CALENDAR

### January

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

3  
4  
17

### WINTER QUARTER 1979

Registration  
Beginning of classes and laboratories  
Last day to enter a course

### February

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28			

7  
19

Midterm; last day to drop a course with no transcript record  
Presidents' Day recess

### March

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

12-15  
15

Final examinations  
End of winter quarter

### SPRING QUARTER 1979

Registration  
Beginning of classes and laboratories

### April

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

9  
16-21

Last day to enter a course  
Spring Week of Devotion

### May

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

1  
28

Midterm; last day to drop a course with no transcript record  
Memorial Day recess

### June

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

4-7  
7  
8-10

Final examinations  
End of spring quarter  
*Commencement Events*

### SUMMER SESSION 1979

Registration  
Beginning of classes and laboratories  
Last day to enter a course

### July

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

4  
27  
  
AUG 9

Independence Day recess  
End of six-week courses  
Information concerning workshops, institutes,  
and other special courses appears in the  
Summer Session BULLETIN  
Eight-week courses end







In bringing this world and its inhabitants into being, the Creator fashioned mankind to relate to others and to the world best within the context of *wholeness* while allowing for diversity in abundance. For it is only within this context that one is able to respond authentically to ultimate human concerns. But God's design became distorted; and as a result *brokenness* now characterizes societies, institutions, and individual lives.

Yet God so loved that He gave, that man might again experience the joy of integrity. At Loma Linda University one is constantly reminded of God's act and of His expectation for men.

- Here is a community where learners who teach and teachers who learn share varied backgrounds and perspectives in the common effort to enlarge their capacities for service.
- Here is a place where all are encouraged toward an appreciation of diversities. Discovered through the enlargement of intellectual and creative powers, developed, and used, these diversities contribute to the masteries of professions and combine to lend beauty and ultimate meaning to education.
- Here persons who seek coherence in the inner self and in the social / physical / environmental whole of which they are a part may become fulfilled as individuals in Christian community.

But the mission of Loma Linda University is not completed in the provision alone of an environment where academic competence is attained and social awareness is heightened. There is an additional dimension, one which gives meaning and purpose to all else that transpires. Here education for time is transcended by education for eternity . . . true education, which reflects the Creator's original design and leads those whom it serves into a healing, at-one relationship with Jesus Christ, whom to know is restoration and completeness.





# I

Admission Information  
Academic Policies and Practices  
Financial Information  
Student Affairs

THE COLLEGE OF ARTS AND SCIENCES of Loma Linda University is the most recent stage of development of a Seventh-day Adventist educational enterprise that began as La Sierra Academy in 1922. The next year, with the addition of coursework in preparation for teaching, it became La Sierra Academy and Normal School. In 1927 it became Southern California Junior College, which became La Sierra College in 1939 and was fully accredited as a four-year liberal arts college in 1946. In 1967 it merged with Loma Linda University to become the University's undergraduate college.

Although its functions are centered on the La Sierra campus of the University, the College also offers an increasing amount of coursework on the Loma Linda campus for students in the professional schools and for College students who live in the Loma Linda area.

## Primary objective

The College has as its primary objective the education of Seventh-day Adventist men and women for the fulfillment of the worldwide mission of the church. Many of these men and women will be formally employed by the church – in its professional ministry, its educational system, its medical services, and elsewhere. Many others will participate in the mission of the church by the witness of their lives in personal integrity, generous service, and Christian devotion.



Accordingly, the College provides an explicitly religious context for the encouragement of personal excellence, physical and emotional health, intellectual breadth and depth appropriate to the baccalaureate level, appreciation of the fine arts, responsible social relationships, and unconditional commitment to supreme values. To this end, campus life incorporates study, work, recreation, and worship.

**Liberal education** An education that is both liberal and liberating includes, besides a concentrated study in the student's major area of interest and a basic competence in written and oral communication, an encounter with the broad areas of knowledge:

*the humanities*, including intellectual and cultural history, music, art, language, literature, philosophy;

*the natural sciences*, including biology, chemistry, physics;

*mathematics*, including both traditional mathematics and computer science;

*the social and behavioral sciences*, including psychology, sociology, anthropology, social work, political science; and

*religion*, including biblical studies, theology, and ethics.

The intention of this kind of education is to enable a student not merely to earn a living, but to live responsibly and creatively in society and under God.

**Applied studies** In addition to the traditional disciplines of the liberal arts and sciences, the College offers coursework in many areas of applied studies: accounting and management, agriculture, studio art, consumer related sciences, data processing, industrial studies, applied music, physical education, secretarial administration, and speech therapy.

## CURRICULUMS

**Baccalaureate degree** The College has organized various curriculums of differing lengths and emphases: The *Bachelor of Arts* curriculum is four years of coursework that places a major concentration within the context of a comprehensive liberal education. The *Bachelor of Science*, *Bachelor of Music*, or *Bachelor of Social Work* curriculum is four years of coursework with somewhat greater concentration in a major field and correspondingly less breadth in the liberal arts.

**Associate degree** The *Associate in Arts* or *Associate in Science* curriculum is two years of coursework divided approximately equally between general and vocational education.

**Certificate** The certificate curriculum is one year (or more) of coursework devoted almost entirely to vocational education.

## MAJOR PROGRAMS

The table below lists by departments and degrees the major programs that are now offered by the College:

DEPARTMENTS	DEGREES	PROGRAMS	
Agriculture	Bachelor of Science	general agriculture livestock production	plant production intensive food production
	Associate in Science	agriculture	
Anthropology and Sociology	Bachelor of Arts	sociology	
	Bachelor of Science	sociology anthropology	behavioral science behavioral science and religion
Art	Bachelor of Arts	visual arts	
	Bachelor of Science	painting design printmaking ceramics	sculpture photography graphic design biological and medical illustration
<i>(Behavioral Sciences, Division of: see Departments of Anthropology and Sociology; Psychology; and Social Work.)</i>			
Biology	Bachelor of Arts	biology	
	Bachelor of Science	biology	
Business and Economics	Bachelor of Arts	accounting	management
	Bachelor of Science	same as Bachelor of Arts, plus:	food service management
Chemistry	Bachelor of Arts	chemistry	biochemistry
	Bachelor of Science	same as Bachelor of Arts, plus:	physical science
Communication	Bachelor of Arts	speech communication and media mass media speech pathology and audiology	
	Bachelor of Science	speech pathology and audiology	
Consumer Related Sciences	Bachelor of Science	child development clothing and textiles	home economics
	Associate in Science	child and family science	nutrition care service
	Certificate	nursery school care	
English	Bachelor of Arts	English writing	

History	Bachelor of Arts	history history and political science	Western thought Latin American studies
Industrial Studies	Bachelor of Arts	industrial arts	industrial studies
	Bachelor of Science	industrial arts	industrial studies
	Associate in Science	institutional plant engineering	
Mathematics	Bachelor of Arts	mathematics	
	Bachelor of Science	mathematics biomathematics	computing science
Modern Languages	Bachelor of Arts	English as a second language French German	Spanish Spanish, bilingual/cross cultural
Music	Bachelor of Arts	music	
	Bachelor of Music	music education performance	church music
Physical Education, Health, and Recreation	Bachelor of Arts	physical education physical education and health	recreation
	Bachelor of Science	same as Bachelor of Arts, plus:	health science
	Associate in Science	recreation	
Physics	Bachelor of Arts	physics	
	Bachelor of Science	physics biophysics	engineering physics
	Associate in Science	engineering physics	
Psychology	Bachelor of Arts	psychology administration of justice	behavioral science
	Bachelor of Science	same as Bachelor of Arts, plus:	business education
Religion	Bachelor of Arts	religion	ministerial studies
	Associate in Arts	Bible work and personal ministry	pastoral ministry education ministry
Secretarial and Business Education	Bachelor of Arts	secretarial administration medical legal educational editorial	business education
	Bachelor of Science	same as Bachelor of Arts, plus: business education	
	Associate in Arts	stenography	medical office assisting
Social Work	Bachelor of Social Work	social work	
	Bachelor of Science	social work and religion	



## PREPROFESSIONAL PROGRAMS

In cooperation with the professional schools of the University, the College offers coursework leading to admission to the following curriculums and programs at various levels.

	PROGRAM	SCHOOL
Certificate	Nuclear medicine technology Radiation therapy technology	Allied Health Professions Allied Health Professions
Associate degree	Dental assisting	Dentistry
A.S.	Medical radiography Nuclear medicine technology Nursing Respiratory therapy	Allied Health Professions Allied Health Professions Nursing Allied Health Professions
Baccalaureate degree	Dental hygiene	Dentistry
B.S.	Dietetics Medical radiography Medical record administration Medical technology Nursing Occupational therapy Physical therapy Physician's assistant Public health science Respiratory therapy	Allied Health Professions Allied Health Professions Allied Health Professions Allied Health Professions Nursing Allied Health Professions Allied Health Professions Medicine Allied Health Professions Allied Health Professions
Master's degree	Biostatistics	Health [Graduate School M.S.]
M.P.H., M.S.P.H.	Environmental health Epidemiology Health administration (5 areas) Health education (4 areas) Nutrition (3 areas) Parasitology Public health nutrition Tropical health	Health Health Health Health Health [Graduate School M.S.] Health Health Health
Specialist degree	Counselor education Educational administration Educational supervision	Education Education Education
ED.S.		
Doctoral degree	Dentistry Medicine Health sciences	Dentistry Medicine Health
D.D.S., M.D., DR.H.SC.		

A student interested in any of these programs should communicate with the school involved and consult its BULLETIN for information concerning specific coursework to be completed in the College before admission to the professional program.

## GRADUATE PROGRAMS

Graduate School	Through the Graduate School, departments of the College offer master's degree programs in anthropology; biology; earth history; communication disorders; English; history; marriage and family counseling; Middle Eastern studies; and sociology.
School of Education	In cooperation with the School of Education, departments of the College participate in master's degree programs in the teaching of agriculture, art, biology,

business, chemistry, English, French, German, history, home economics, industrial arts, mathematics, music, physical education, physics, psychology, religion, sociology, Spanish, and speech.

## ADVENTIST COLLEGES ABROAD

Adventist Colleges Abroad is a consortium of ten colleges and universities in the United States established to provide opportunities for qualified students to study the French, German, Spanish, and Chinese languages overseas at the following institutions:

Séminaire Adventiste du Salève, Collonges-sous-Salève, France  
Seminar Schloss Bogenhofen, Braunau, Austria  
Seminario Adventista Español, Sagunto, Spain  
South China Union College, Hong Kong

**Cost** The cost of this overseas study, including transportation, is comparable to that at the American colleges. Further information may be obtained from:

Adventist Colleges Abroad  
Loma Linda University  
Riverside, California 92515

**Prerequisites** The participant need not be a language major, but must have a minimum of 8 quarter units, and preferably 16 or more units, in the language. He must have a language grade point average of 3.0 (students going to Hong Kong are not expected to have a Chinese language background) and an overall grade point average of 2.5; and he must have a good citizenship record.

## ORGANIZATION AND ADMINISTRATION

**Dean** The Dean is the chief administrative officer of the College and is responsible for its academic program. He is assisted by an associate dean; coordinators for humanities, natural sciences, and mathematics, professional and applied studies; and a director for the division of behavioral sciences. The Dean and his associates also hold active teaching positions on the College faculty.

**Faculty** Officers of the faculty are the Dean, who serves as its chairman and presides at its general meetings; an associate dean, who serves as vice chairman; and a secretary and parliamentarian elected by the faculty.

**Committees** The administration of the College is guided by the work of seven faculty policy committees, which are elected by the faculty as a whole and bring to it recommendations regarding specified areas of general faculty concern: academic affairs; teaching and teacher welfare; administration and finance; grants, research and publication; student life; spiritual life; and campus affairs.



The Executive Committee of the College consists of the Dean, associate dean, division director, coordinators, and chairmen of the twenty departments of instruction. Three other administrative committees are appointed by the Dean and report to him: admissions, academic standards, and student recommendations.

La Sierra campus administrative committees on which the College faculty holds major representation include the committees on awards and scholarships, library, faculty social activities, religious activities, student affairs, and teacher education.



## ADMISSION INFORMATION

The admissions committees of the University put forth considerable effort to be assured that an applicant to any of the schools is qualified for his proposed curriculum and seems likely to profit from educational experience in this University. The Admissions Committee of the College of Arts and Sciences examines evidence, derived from the usual sources consulted by colleges and universities, of scholastic competence, moral and ethical standards, and significant qualities of character and personality.

### APPLICATION AND ACCEPTANCE

Where to write      Inquiry about admission and acceptance should be addressed to:

Admissions Office  
Loma Linda University  
Riverside, California 92515

Procedure      1. In anticipation of applying for admission to the College, the prospective student should arrange for (a) transcripts of test results and grades at schools formerly attended to be sent directly to the University, (b) two wallet-size photographs, (c) names of those of whom the University may request personal information about the applicant.

2. As early as possible, the prospective student should submit a formal application together with all supporting information and the nonrefundable application fee specified in the Schedule of Charges in the *Financial Information* section of this BULLETIN.

3. The Admissions Committee takes official action, and the Admissions Office notifies the applicant of acceptance or nonacceptance.

4. The accepted applicant who is planning to live in a University residence hall should submit the required deposit (see *Financial Information*).

5. As soon as possible, the accepted applicant should also complete the medical history questionnaire (which he receives with his acceptance) and send it to the Student Health Service before he is on campus at registration time.

Before coming to the campus, the student should make certain that he has been accepted.

Deadlines      Applications for the fall, winter, spring, and summer terms are due on August 15, December 1, March 1, and May 1, respectively. Late applications must be accompanied by the special late application fee (see *Financial Information*). Those desiring financial aid should have their applications in by May 1. The financial aid application deadline is June 1.



**Physical examination** In most cases the self-completed medical history mentioned above replaces the physical examination previously required under state law. If any further information is required, the campus health service notifies the student immediately.

## ADMISSION OF FRESHMEN

**Regular standing** Admission to regular standing is ordinarily granted to an applicant who has (a) a diploma or its equivalent from an accredited secondary school, (b) a grade average of at least C (2.0), (c) the specified amount of credit in particular subject areas (see below), (d) a percentile ranking of 30 or above on both the verbal and quantitative sections of the Scholastic Aptitude Test or the American College Test, and (e) satisfactory personal recommendations. In unusual cases, the Admissions Committee may, at its own discretion, waive one or more of these requirements.

**Provisional standing** An applicant who does not fully meet the requirements for admission to regular standing may be admitted to provisional freshman standing, with regular standing conditional upon the fulfillment of alternative requirements. One such requirement may be satisfactory completion of specified courses in the Academic Skills Program. This is especially designed to help an incoming student develop reading, composition, computational, and study skills.

An applicant with a grade average of less than C (2.0) and a percentile ranking of less than 30 on the verbal section of the Scholastic Aptitude Test or the American College Test *is required* to register for and successfully complete the Academic Skills Program in order to achieve regular standing.

Whenever any coursework (including the Academic Skills Program) is specified as a requirement for regular standing, it must be completed by the end of the student's third quarter in residence.

**Required subjects** The following pattern of secondary school credit is the *minimum* acceptable for admission to the College:

English, 30 semester periods.

Mathematics, 10 semester periods.

Natural sciences, 10 semester periods.

Social sciences, 10 semester periods.

Religion, 10 semester periods *per year of attendance at a church-related secondary school.*

Additional coursework in mathematics, natural sciences, and social sciences: 10 semester periods in each of two of these three areas; *or* 10 semester periods in one of the three areas and 20 semester periods in a foreign language.

Electives to complete 160 semester periods (not including physical education).

**Recommended subjects** In order to ensure adequate preparation for, and maximum flexibility in, his college curriculum, a student should complete the following pattern:

English, 30-40 semester periods.

Foreign language, 20 semester periods.

Mathematics, 20-30 semester periods.

Natural sciences, 30 semester periods (including, if possible, biology, chemistry, and physics).

Social sciences, 20-30 semester periods (including American and world history).

Entrance tests      A prospective student should take the Scholastic Aptitude Test (SAT) of the College Entrance Examination Board during his senior year of secondary school and have the results sent to the Admissions Office of the University. Ordinarily this test is taken at the student's school; but if it is not available there, an applicant may make his own arrangements by writing directly to the College Entrance Examination Board (from Colorado westward, addressing correspondence to Box 1025, Berkeley, California 94701; and from Nebraska eastward, to Box 592, Princeton, New Jersey 08540).

The SAT and other placement tests must be completed before initial registration in the College. Information concerning testing dates and locations is sent to accepted applicants.

Advanced placement      Credit toward graduation may be granted to an entering student who has satisfactorily completed Loma Linda University Extension coursework or proficiency examinations of the Advanced Placement Program (APP), the College Level Examination Program (CLEP), or one or more departments of the College. To obtain credit by examination, a student petitions the Dean; if consent is given, credit is recorded after the student has earned at least 12 units of credit with a grade average of C (2.0).

#### OTHER ADMISSION PRACTICES

Reentrance      A former student who wishes to resume his studies at the University must meet the regular entrance requirements in force at the time of his reentrance.

Transfer students      A student applying for admission by transfer from another college or university must file with the Office of University Records complete records of studies taken at the secondary and college levels. Acceptance of credit for college-level coursework at another institution is subject to the following limitations:

1. The maximum amount of credit accepted from an accredited *junior college* is 105 quarter units (lower division).

2. Credit transferred from a college *outside the United States* or from an *unaccredited college* is evaluated and accepted only after a student has earned 12 units of credit with an average grade of C (2.0) or better at Loma Linda University.

3. Credit for coursework at a *military service school* is granted according to recommendations of the American Council on Education and/or the California Committee for the Study of Education.

4. Credit for coursework in a *professional school* is accepted only if (a) the school is recognized by its regional or national accrediting association, and (b) the coursework is essentially equivalent or substantially relevant to a curriculum at Loma Linda University.

5. The University reserves the right to require satisfactory performance on an examination to validate any transfer credit.

## International students

Admission of students from countries other than the United States or Canada is limited to those who (a) meet all regular requirements for admission; (b) submit official English translations of their transcripts; (c) furnish suitable recommendations from responsible persons; (d) pass the Test of English as a Foreign Language (TOEFL) or its equivalent, if English is not the student's native language; and (e) give evidence of ability to meet all financial obligations to the University during the proposed course of study.

The student who does not have a sufficient score on TOEFL, or other evidence of English proficiency, is required to attend an intensive American language institute offered during the five weeks preceding the beginning of the autumn quarter.

## Student visa

A person entering the United States on a student visa (F-1) must carry successfully a full study load during each quarter of each academic year (12 units for the undergraduate; 8 units for the graduate student). The applicant must be prepared to provide an advance deposit, as required by the Student Aid and Finance Office, and must give assurance that additional funds will be forthcoming to meet school expenses. Scholarships and assistantships available to international students are scarce, and employment is limited by regulations of the Immigration and Naturalization Service to no more than 20 hours per week.

## Exchange visitor

Through the U. S. Department of State, the University has a program for exchange visitors that may be advantageous for international students. A person entering the United States on an exchange visitor visa (J-1) is subject to the same regulations as to study load and work limitations as the F-1 student. Further information may be obtained from the foreign student adviser in the Student Affairs Office.

## Visa forms

For either the F-1 or the J-1 status, visa forms are provided by the foreign student adviser in the Student Affairs Office after the applicant's acceptance and after financial arrangements have been made with the Student Aid and Finance Office.

## Veterans

A student eligible to receive veteran's benefits under the 1966 enactment should have his records transferred to the Veterans Administration Regional Office, 11000 Wilshire Boulevard, Los Angeles, California 90024, and have a certificate of eligibility sent to the Director of Admissions and Records.

Application for admission should be made well in advance. Further information may be requested of the Office of University Records.



## ACADEMIC POLICIES and PRACTICES

The information in this BULLETIN is made as accurate as is possible at the time of publication. The student is responsible for informing himself of and satisfactorily meeting all requirements pertinent to his relationship with the University. The University reserves the right to make such changes as circumstances demand with reference to admission, registration, tuition and fees, attendance, curriculum requirements, conduct, academic standing, candidacy, and graduation.

### REGISTRATION AND ATTENDANCE

**Registration** A student must register on the dates designated in the University calendar in this BULLETIN. Registration procedure includes recording information on forms furnished by the Office of University Records, clearing financial arrangements with the Office of Student Aid and Finance, and filing the forms at the Records Office.

Late registration is permissible only in case of a compelling reason; a charge is made if registration is not completed on the designated dates. The student may not attend class without being registered, and in no case may registration take place later than the second week of the term.

**Attendance** Attendance is required beginning with the first day of each session. Regular attendance at all appointments is expected. Absence in excess of twenty percent of the appointments in a course is sufficient cause for withholding credit.

**Program change, withdrawal** The student who wishes to add a course, or to withdraw from a course or a program, must complete and file appropriate forms supplied by the Office of University Records. He should do this in consultation with his adviser and/or the Dean.

**Deadlines** A course dropped before midterm is not included on grade reports or transcripts. If a student withdraws after midterm, a notation of NC is recorded. A student may change his registration in any class from credit to audit until the midterm.

A student who wishes to add a course, or to change his registration in any course from audit to credit, must do so within the first two weeks of the quarter.

### REGISTRATION CLASSIFICATIONS

**Regular** A student who has satisfied all prerequisites and is registered for a standard curriculum leading to a degree or certificate is a *regular* student. The regular student is subject to strict application of the academic standards and policies.

**Provisional** A student who is permitted to remove qualitative or quantitative deficiencies in order to qualify or requalify for regular standing is classified as a *provisional* student during the transition period.

**Special** A student who enrolls for selected courses (for personal or professional purposes without application toward a degree) is classified as a *special student*. Tuition is paid at the regular rate. Consent for enrollment as a special student is granted by the department, with the endorsement of the Dean, and is subject to classroom and laboratory space.

## STUDY LOAD

Unit of credit	Credit is indicated in <i>quarter units</i> . A quarter unit of credit represents 10-12 class hours, together with requisite study, preparation, and practice, or approximately 30 laboratory hours.
Repeated courses	Units of credit are counted toward graduation only once for any specific course. When a course is repeated, only the second grade will be counted in the student's grade point average.
Course sequence	Credits toward graduation usually are not counted for a beginning or introductory course which is taken after a more advanced course in the same area, nor for a course which is taken after another course for which it is a prerequisite.
Normal limit	A normal study load in the College is 16-17 units of coursework per quarter, including all coursework for which the student is registered in the schools of the University or elsewhere. A student of exceptional ability may register for additional study with the consent of the Dean.
Full-time status	A student carrying 12 or more units per quarter is considered to be a full-time student.

## SPECIAL COURSEWORK

The College allows, and in many cases encourages, nontraditional approaches to learning, including correspondence and extension coursework and independent study projects.

Correspondence	<p>Credit from a recognized correspondence school (such as Home Study Institute, the Adventist correspondence school in Washington, D. C.) may be accepted as lower division credit toward the general requirements for a degree or certificate, up to a maximum of 16 units. With the consent of the department, correspondence coursework (within a maximum of 16 units) may be applicable toward the requirements of a major program.</p> <p>Transcripts of correspondence credit to be applied toward degree requirements must be received by the Office of University Records by the beginning of the quarter prior to graduation.</p>
Extension	<p>A limited amount of coursework offered by Loma Linda University Extension, or by the extension services of other institutions, may be applicable toward general or major requirements, with the consent of the appropriate department and the Dean of the College.</p>
Independent study	<p>Independent study may be undertaken in connection with major programs in most departments of the College, subject to the approval of the department chairman.</p>

## CLASS STANDING

Definitions	Students in the College are accorded class standing on the basis of the amount of coursework completed as follows: Freshman, less than 44 units Sophomore, 44-87 units Junior, 88-135 units Senior, 136 or more units
Eligibility for coursework	A freshman may take remedial or lower division courses (numbered 001-299) but not upper division courses (numbered 301-499). A sophomore, junior, or senior may take any lower or upper division course for which he has the prerequisite qualifications.
Graduate courses	A senior who meets the requirements for graduate standing may be permitted to take graduate courses (numbered 501-699) concurrently with courses that complete his bachelor's degree requirements, provided that this does not constitute an overload.

## SCHOLASTIC STANDING

Grading system	Grades and grade points per unit of credit are defined as follows:			
	A	4.0	Outstanding performance	C 2.0 Satisfactory performance
	A-	3.7		C- 1.7
	B+	3.3		D+ 1.3
	B	3.0	Very good performance	D 1.0 Minimum acceptable performance for credit
	B-	2.7		
	C+	2.3		

Coursework in which the grade is less than C (2.0) is not applicable toward the requirements of a major program.

A special grade is given in certain cases to indicate credit but does not have a grade point value and therefore does not affect the grade point average:

S Satisfactory performance (equivalent to C or better)

Other designations are used to make clear the student's status but not to indicate credit, and do not affect the grade point average:

AU Audit (for attendance only)  
IP In progress (for coursework requiring more than one term)  
I Incomplete (where course requirements can be completed within the following quarter)  
NC No credit (because of deficiency in the quality or quantity of work, withdrawal after midterm, etc.)

Optional grades	A student may elect a grade of S in any course taken as a free elective or to fulfill the general requirements in vocational/avocational skills or movement skills,
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by submitting a written request to the instructor at any time before the course grades are reported to the Office of University Records.

A student may elect a grade of NC in any course by submitting a written request to the instructor at any time before the course grades are reported to the Office of University Records.

When an optional grade has been elected by a student and reported to the Office of University Records, it is not subject to change.

#### Academic probation

A student whose grade point average for any term falls below 2.0 is automatically on academic probation and is thus subject to restricted registration. Unless his grades improve during the following quarter, he may be counseled to withdraw from the College.

A student who receives an NC or I in two or more courses, or in two-thirds of his attempted coursework in any term, may be placed on academic probation regardless of his grade point average.

#### Acceptable progress

It is understood that a student at Loma Linda University, College of Arts and Sciences, is considered to have made minimum measurable progress toward the satisfactory completion of his course of study only if he maintains a cumulative grade point average of 2.0 and completes two-thirds of the units attempted each quarter.

#### Graduation with honors

A student in the College is graduated with honors on the basis of his cumulative grade point average figured at the beginning of the last term before graduation, as follows:

- With honors, 3.5
- With high honors, 3.8
- With highest honors, 3.9

### CREDIT BY EXAMINATION

A student may meet an academic requirement, within specified limits, by passing a waiver examination or a proficiency examination at least equal in scope and difficulty to a final examination in the course.

#### Waiver

Certain course requirements may be waived if the student successfully passes a waiver examination, but no credit results. To take a waiver examination, the student petitions the Dean for consent to take the examination on the scheduled date. A senior seeking waiver of course requirements must take the waiver examination before the final quarter of registration. A fee is charged, as indicated in the Schedule of Charges.

#### Proficiency

To seek credit by proficiency examination, the student first gains the consent of the appropriate department chairman and then petitions the Dean. If consent is given, the student should take the examination before enrolling for further study in the field of the examination. If the student is successful in passing the proficiency examination, S is recorded on his permanent record, and his grade point average is not affected. A fee is charged for the examination, as indicated in the Schedule of Charges.

Credit for proficiency examination is recorded only after the student has successfully completed one quarter, or the equivalent, at the University and has earned at least 12 units of credit with a grade average of C (2.0).

Credit by examination is not given for remedial courses (numbered below 100) or for courses such as foreign language levels I and II, and beginning typewriting.

### TRANSCRIPTS OF CREDIT

Transcripts of credit are ordinarily accepted by the University only when they are sent directly by another institution. Transcripts of credit earned at this University are sent by the Office of University Records to other institutions on the written request of the student and payment of the required fee (see the Schedule of Charges in the *Financial Information* section), provided financial obligations to the University have been met.

### GRADUATION CEREMONIES

A student who completes the requirements for a degree at the end of the spring quarter is expected to be present at the University's annual conferring of degrees and the presentation of diplomas. Permission for the conferral of a degree in absentia is granted on the recommendation of the Dean of the College.

A student who completes the requirements for a degree at the end of the autumn or winter quarter or the summer session is invited but not required to participate in the subsequent conferring of degrees.

The University reserves the right to prohibit participation in graduation ceremonies by a student who has not satisfactorily completed all the requirements for a degree.





## FINANCIAL INFORMATION

### GENERAL PRACTICES

**Plan ahead** The student is expected to have arranged for financial resources to cover his expenses before the beginning of each school year. Accounts with other schools or with this University must have been settled. To prevent long waiting lines at registration, the student is urged to make financial plans well in advance, to complete financial arrangements with the Student Aid and Finance Office on or before announced registration dates.

**Business hours** To avoid inconvenience, parents, sponsors, and others who plan to come from a distance to the campus for business purposes should *telephone* for appointment, especially if they are unable to arrive during official business hours

9:00-12:00 Monday through Friday

1:00- 3:00 Monday through Thursday

All offices are *closed on Saturday, Sunday, and legal holidays*. Appointments may be made by telephone to *area code 714* and the following numbers:

Student Finance / 785-2251

Student Aid / 785-2175

Student Employment / 785-2147

**Advance payment** Payment must be made in advance as follows: (a) a \$50 *room deposit* (for residence hall students) by September 1; (b) the *flat charge* for tuition before registration; (c) the *guarantee deposit* of \$1,250 for *international applicants* before issuance of I-20. For further details, see the Schedule of Charges; Deposits; International Students; Payment Plans; and other subsections in this *Financial Information* section of the BULLETIN.

**Cash needs** The student should arrange to have cash available for all special charges and miscellaneous expenses. It is advisable to deposit at least \$75-150 each quarter in the Student Bank for books, vehicle registration, supplies, personal expenses, etc.

**Student Bank** The University operates the Student Bank for the convenience of students. If the parent or sponsor wishes to write only one check to include money for both tuition and other expenses, he should *indicate that the surplus may be deposited* in the Student Bank. Money earned by the student in part-time employment can also be deposited in the Student Bank for withdrawal at the student's discretion. The minimum transaction is \$1.

**Checks** Checks should be made payable to Loma Linda University, La Sierra campus, and should have noted thereon the *student's name and account number* to ensure that the correct account is credited. A charge may be made by the University when a check is not honored by a bank.

- Health insurance** Health insurance coverage is automatically provided in the payment of charges to students registered for 7 units or more. A student enrolled for fewer than these units may *request and pay for* health service coverage. Health insurance covers the hospital and medical expenses outlined in the insurance information folder. Items not covered by the terms of the health insurance are payable by the student in all cases, and payment is expected at the time these services are given. Married students may have family coverage by applying for it within 31 days of their initial enrollment date for the year and by paying additional premiums. Information on rates and the appropriate forms are available at the Cashier's Office.
- Veterans** An accepted student eligible to receive veteran's benefits under the 1966 enactment should (a) transfer records to the Veterans Administration Regional Office, 11000 Wilshire Boulevard, Los Angeles, California 90024; and (b) have a certificate of eligibility sent to the University Records Office, La Sierra campus. Information regarding veteran's benefits may be obtained at the University Records Office.
- Room deposit** The accepted residence hall student is required to pay the \$50 deposit before a room is assigned or occupied. Dates by which deposit must be made or notification of cancellation given are September 1, December 1, March 1, and May 1. These relate to the term (fall, winter, spring, summer) for which initial registration is effective. Further details are published in the *Student Handbook*. Loan contracts, grants, scholarships, or other kinds of financial aid are *not accepted in lieu of* this deposit.
- International students** An international applicant (other than Canadian) on a student visa is required to make an advance deposit of \$1,250. All international students must furnish evidence of additional resources to finance the expenses of the education planned. Because international students do not qualify for loans and grants listed under Student Aid, parents or sponsors are responsible for making payments in accordance with the financial practices of the University. A Financial Information Form is available from the Office of Admissions. The student must obtain the proper signatures on the form and file it with the Student Aid and Finance Office before clearance can be given for the issuance of an I-20 form.
- Under the "bursary plan" of the Seventh-day Adventist church, an international student may apply for financial aid through the treasurer of his division. Undergraduate students accepted under this plan receive funds matching the church division funds up to 50 percent of the cost of tuition. Employment in the United States is subject to the regulations of the Immigration and Naturalization Service.
- Flat rate** A residence hall student pays the full flat rate regardless of study load (except that a tuition adjustment is permitted if fewer than 12 units are needed for each of the two final quarters before graduation). No reduction of the flat rate is made when a residence hall student reduces his study load during the quarter.

Audit	A student may audit a lecture course only and pay one-half of the minimum load tuition rate for the course. Courses requiring special instruction and laboratories such as art, ceramics, auto mechanics, chemistry, etc., cannot be taken on an audit basis. If a student later wishes to challenge the course audited by taking a proficiency examination, the other one-half of the tuition as well as the fee for the examination must be paid.
Financial clearance	The student is expected to make satisfactory arrangements with the Student Aid and Finance Office for meeting all financial obligations to the University and to keep his financial status clear at all times. He must obtain financial clearance at the beginning of any new term and before taking final examinations prior to graduation.
Transcripts	The University reserves the right to withhold all information concerning the record of a student who is in arrears in the payment of accounts, other charges, or student loans. No transcripts are issued until all of the student's financial obligations to the University have been met as set forth in this BULLETIN. This includes being current in repayment of any student loan.
Past due account	A service fee of 1 percent per month is charged on a past due account. This is an annual interest rate of 12 percent.
Statements	Under the Privacy Act of 1974, a postsecondary student has full rights of privacy with regard to his account. Statements will be sent only to the person indicated by the student on his registration form.

#### SCHEDULE OF CHARGES for 1978-79 (subject to change by Trustee action)

**Flat charge** The flat charge enables the student to know the cost of education in advance and make arrangements to finance the program. For *residence hall* and *offcampus* students *alike*, the following are included in the indicated flat charge per quarter:

- Tuition (for full-time study load, 12 units to 18.5 units).
- Health insurance (routine care and medicine).
- Applied music instruction as required for a major or approved for a minor in music.
- Concert series ticket.
- Diploma, certificate, academic costume.
- ASLLU fees.

Included additionally for residence hall students *only*:

- Room charge and membership in residence hall club.
- Meals (as much as the student wishes to eat at mealtime, according to the meal plan selected) from registration to the close of examinations, *exclusive of Thanksgiving and interquarter recesses*, but inclusive of:
  - freshman orientation time;
  - student teacher assignment time;
  - candidate participation in commencement events;
  - Snack Shop ticket (\$10 per quarter).



**FLAT CHARGE PER QUARTER (payment required by or before registration)**

[Because of unpredictable costs of food and other items, these rates are subject to change at the beginning of any quarter.]

- \$1625 Residence hall: up to 18.5 units per quarter, with 21 meals per week.
- 1607 Residence hall: up to 18.5 units per quarter, with 17 meals per week. (No meal Saturday night or all day Sunday.)
- 1565 A 10-meal per week plan is available with special permission.
- 1095 Offcampus: 12-18.5 units per quarter.

**UNIT CHARGE**

- \$ 92 Per unit (or fraction), fewer than 12 units.
- 60 Per unit (or fraction), more than 18.5 units.

**AUDIT CHARGES**

- \$ 46 Per unit (see audit regulations, page 29).

**DEPOSITS REQUIRED**

- \$ 50 Residence hall room reservation for fall, winter, spring, summer terms: Due September 1, December 1, March 1, May 1.
- 1250 International student.

**SPECIAL CHARGES (payable in cash)**

- \$ 10 Application (nonrefundable).
- 25 Late application for fall, winter, spring, summer terms (nonrefundable): Application after August 15, December 1, March 1, May 1.
- 25 Application (nonrefundable): International students.
- 10 Reapplication after nonresidence 3 quarters (nonrefundable).
- 10 Late registration, first day after published registration date. \$3 per day thereafter.
- 5 Meal plan change.
- 5 Business Office collection charge for unpaid department charges or check returned for insufficient funds.
- 15 Waiver examination.
- 30 Proficiency examination (up to 4 units credit).
- 20 Thesis or project continuation per quarter.
- 3 Change of identification card.
- 2 Transcript of credit, after first one.
- Library fine or loss, parking fine, property or supplies breakage or loss.
- Special physical education activities.
- 8 Vehicle registration (\$20/year).

**MISCELLANEOUS EXPENSES (payable in cash)**

Books, supplies, music, etc. (estimated \$50-100 per quarter).  
Health charges: Care other than that provided by campus Health Service or covered by health insurance.  
Nonroutine psychological tests.  
Campus clubs and organizations.  
Meal charges other than those included in flat rate:  
During holiday and interquarter recesses; snack shop or market.  
Transportation:  
Fieldwork, practice teaching, intercampus travel, offcampus assignment.  
Laundry.  
Entertainment (other than concert series).

**APPLIED MUSIC CHARGES (payable in advance at Cashier's Office)**

- \$ 65 Per unit, credit or noncredit, for students enrolled for 12-18.5 units, unless required for major or approved for a minor in music.
- 92 Per unit, credit or noncredit, for students enrolled for less than 12 units, unless required for major or approved for a minor in music.
- 65 Secondary or elementary school student: 1 half-hour period weekly, 9 per quarter.

## REFUNDS

**Withdrawal** When a student withdraws from all courses and leaves school, these practices are followed:

1. *Date of withdrawal.* The official date of withdrawal and the effective date of the calculation of a refund is the date on which the *completed drop voucher* is turned in to the Records Office.

2. *Tuition.* A minimum charge of \$50 is made if the student withdraws during the first 5 days after the published registration date; thereafter 3.3 percent of the tuition is charged per school day, up to the full amount. These charges apply to part-time as well as full-time students.

3. *Board.* The \$10.00 snack shop ticket charge is nonrefundable. The charge for board used will be \$4.35 per day for the 17 and 21-meal plan, and \$22.00 per week or fraction thereof for the 10-meal plan.

4. *Room.* The charge for room is on the basis of \$32 per week or fraction thereof. Room charge is not refunded after the seventh week of the quarter.

5. *Identification card.* The student must return his ID card to the Student Finance Office to establish eligibility for refund. Refund of meal charges will be figured from the date the ID card is received in the Student Finance Office.

6. *Illness.* Special consideration may be given for tuition refund in the case of prolonged illness.

7. *Return home.* If the student does not have funds for return fare home, an emergency assistance may be granted, provided there is sufficient credit in the account.

8. *Room deposit.* Refund will be made when the residence hall dean returns the signed residence hall contract to the Cashier's Office. The University reserves the right to apply the deposit to any unpaid obligations.

9. *Refund.* Ordinarily the balance of the account is refunded approximately one month from the date of the completed drop voucher. The refund is made to the student unless other instructions are given. If a student is receiving financial aid, under normal circumstances the surplus is returned to the aid fund account. California state scholarship and BEOG funds are prorated.

**Change in study load** Any course added will be charged from the beginning of the quarter. When a commuting student drops one or more courses during the quarter, the charge is prorated on the same basis as for withdrawal from all coursework. The student must present the *add-drop voucher* during the quarter in order to receive a refund. When a residence hall student reduces his study load, no refund is made except for an overload.

**Residence change** A student who chooses to move out of the residence hall during the quarter is not eligible for a refund on room charge for the remainder of the quarter.

Meal plan change      A change of meal plan ordinarily may be made only at registration time at the beginning of the quarter. Otherwise the change of meal plan charge of \$5 applies, as well as the fee for a new ID card.

Overpayment      If the account is overpaid, the student should allow time for all records (such as cashier receipts, registration records, etc.) to clear through the normal accounting procedures. A signed request form or letter from the student is necessary to initiate the procedure for any refund.

## PAYMENT

Two methods of payment are available to the student and/or parents:

- Direct to the University
- Contract with a loaning agency

The details of these methods are explained in the following sections. Once a payment plan is determined and programed for the quarter, the student may not change to another plan without an additional charge.

Direct payment      *Tuition* is to be paid in full at the beginning of each quarter. *Board and room* charges for the full quarter are due and payable one month after the beginning of the quarter.

A 1 percent per month service fee is charged on an account which is 30 days or more past due. This is an annual rate of 12 percent.

Contract payment with outside agency      The student or parents may contract with a loaning agency for the expenses of the quarter, the school year, or the entire curriculum (keeping in mind that processing a loan contract takes approximately 4 or 5 weeks). The contract may be negotiated for one academic year, with 8 to 12 monthly payments; or for periods up to four academic years, with monthly payments extended over 48, 60, or 72 months.

If a contract payment plan is selected, the payment check is made to the loaning agency, not to the University.

The benefits of the plans are: (a) payments are predetermined, so that financial plans can be made in advance; (b) payments are reduced to a minimum by being spread over a period of time; (c) if the account is insured, the contract becomes paid in full on the death or total disability of the person responsible for payments; some contracts also insure the student; (d) no cancellation fee is charged by the loan agency in case of withdrawal from registration.

## EMPLOYMENT

Application      A student who needs to work part time to assist with expenses must obtain a work permit from the student employment office. The student applying for a scholarship, grant, or loan, or for work is requested to provide evidence of financial need by filing a *Financial Aid Form* (FAF) with College Scholarship Service. Forms are available from secondary school counselors or the Student Aid and Finance Office. Filing should be completed by April 15 so that the necessary information will be received in the Student Aid and Finance Office by June 1.



- Campus work      Campus employment opportunities are offered primarily by such services as cafeteria, dairy, farm, grounds, housekeeping, maintenance, Versitron, and market. Some additional opportunities are offered in the residence halls, the library, the general administrative offices, and the academic department offices.
- Local businesses      A few local businesses adjacent to the campus provide a limited number of employment opportunities at which the student may earn an average of approximately \$800 a year.
- Cash payment      Cash payment for part-time employment by the University is made on a bi-weekly basis for the student's use for personal needs, loan payments, etc. The student may elect to have his check applied directly to his account (except the student on a federal work-study program).
- Tithe      Payroll deduction is available to facilitate the payment of tithe on earnings. Arrangements are made at the student's request. A student on a federal work-study program cannot apply for a payroll deduction for tithe.

## STUDENT AID

Financial assistance for education is available through federal government sources, state scholarships, private lending agencies, certain University resources, and established awards, grants, scholarships, revolving loan funds, and the like.

- How to apply      To apply for aid or enter on a contract payment plan, the student should (a) *be acquainted* with the information in the Schedule of Charges and in Budgeting for Financial Aid, (b) *be aware* that processing an aid application or loan contract takes considerable time, and (c) *begin planning* long enough in advance so that funds are available in time for registration.
- Required forms      Financial aid to students is granted on the basis of need. So that need can be evaluated in a consistent way, students seeking aid are required to submit a *Financial Aid Form* (FAF) to College Scholarship Service (CSS) by April 15.
- In addition to filing the FAF by April 15, the student (new or returning) seeking aid should file a *University Aid Application* form by June 1. Those who apply later than this date receive aid only if funds are available after the needs are met for those who file complete applications by June 1.
- The FAF, together with information about the CSS need-analysis system, may be obtained from the high school guidance counselor by the new applicant for admission to the University. A student currently enrolled at this University can obtain the FAF from the Student Aid Office.
- Code 4380      The student should use CSS code number 4380 to identify this University.

## FEDERAL PROGRAMS

**Eligibility** Financial aid programs sponsored by the United States Department of Health, Education and Welfare require the provision of information used for evaluation by College Scholarship Service in establishing the student's eligibility for aid. The student classified as a tax-deductible dependent must have his "Parents' Information" section of the FAF filled out, as well as the "Student's Information" section. A clearly independent student needs to fill out only the "Student's Information" section and submit the FAF to CSS.

In order to continue to be eligible for federal aid, a student must be making satisfactory academic progress. For a full-time student, this means the satisfactory completion of a full year's requirement each academic year.

**Citizenship** To qualify for federal financial aid, a student must be a United States citizen or a person in the United States for other than temporary purposes and intending to become a permanent resident. International students are not eligible to receive federal aid.

The following five programs of student assistance are supported by the U. S. Office of Education and are available to Loma Linda University students who meet the federal eligibility requirements:

- Basic Educational Opportunity Grant (special application necessary)
- Supplemental Educational Opportunity Grant
- National Direct Student Loan
- Federally Insured Student Loan
- College Work-Study Program

Determination of what aids are applicable in given cases is made in the Student Aid and Finance Office (with the exception of the Basic Educational Opportunity Grant and part of the Federally Insured Student Loan).

**Regulations** The student should acquaint himself with the Department of Health, Education and Welfare regulations which govern each federal program.

**National Direct Student Loan** Up to \$1,500 per year may be available for needy students. Nine months after ceasing to be in at least half-time attendance, the recipient begins to repay the loan at 3 percent interest. No payments are required for up to three years during services in the armed forces, Peace Corps, or VISTA.

**Basic Educational Opportunity Grant** The Basic Educational Opportunity Grant (BEOG) program makes funds available to eligible students who are enrolled on at least a half-time basis. To apply for a BEOG, a student must complete the *Application for Determination of Basic Grant Eligibility* available from high school counselors or from the Student Aid Office.



Supplemental Educational Opportunity Grant	The Supplemental Educational Opportunity Grant (SEOG) program is for undergraduate students whose financial need is such that without the grant the student would be unable to continue his education. The minimum grant is \$200, and this must be matched with a loan, a scholarship, another grant, or labor earnings.
College Work-Study Program	A student who has financial need is offered work during the school year to assist in meeting educational expenses. Certain offcampus jobs at recreation or camping centers are available during both the summer and the academic year.
Federally Insured Student Loan	Maximum loans of \$2,500 an academic year insured by the federal government may be available from participating lending institutions in many states. The government pays the interest while the student is in school, if there is a need after the family's contribution and financial aid granted has been considered. If the student does not qualify for federal interest benefits, he may still borrow; but he must pay his own interest from the time he takes out the loan until it is repaid. The loan repayment may extend up to ten years at 7 percent interest, with a minimum payment of \$360 per year on smaller loans. (Some participating banks require a family depositor relationship for at least six months before they consider accepting an application from a student.) The borrower must submit an affidavit that the loan will be used only for educational purposes; the affidavit must be signed before a notary public or other person authorized to administer oaths. Application forms may be obtained from the lender or from the Student Aid Office. A FAF is required of an applicant if the adjusted family income is \$25,000 or more.
United Student Aid Fund	Certain banks handle United Student Aid Fund loans instead of FISL. The regulations and policies for USAF loans are the same as for the FISL program.

#### OTHER PROGRAMS

Grant-in-aid	A limited fund is available through the University for special grants to assist students with special financial need and to supplement other aids. Needy students who may not be eligible for assistance under government-sponsored programs or who, because of special circumstances, cannot receive parental support, may be assisted with a grant-in-aid. These range from \$50 to \$600 per year and depend on individual circumstances. Application is made each year with an aid application after proving financial need to the financial aid officer.
California State Scholarship	Scholarships are available to California residents who show satisfactory results on the Scholastic Aptitude Test of the College Entrance Examination Board and who have a satisfactory grade point average. Residents may apply for such scholarships if they meet requirements and establish need. These scholarships provide tuition grants up to \$2,700 at the college of the student's choice. Applications for state aid are available from all secondary school counselors and the University Student Aid Office.



The state of California also offers the College Opportunity Grant and the Vocational Training Grant. Applications are available from all secondary school counselors and from the University Student Aid Office.

Monthly contract  
loan plans

The student not eligible for low-interest federally sponsored loans may elect a contract plan (some plans with interest; two prepayment plans with a service charge but no interest). Under such plans a student may contract for one year (with 8 to 12 monthly payments) or up to four years (with monthly payments extended up to 60 months). Contracts are signed with and payments made directly to the agency.

Revolving loan funds

A number of low-interest revolving loan funds, from which limited loans are granted to qualifying students, have been set up as named:

Robert E. Cleveland Loan Fund	Miracle Loan Fund
Dartley Revolving Student Loan Fund	F. Oliphant Memorial Fund
William B. Greene Loan Fund	Fadelma Ragon Sargeant Loan Fund
Milton and Ethel Griese Loan Fund	Ellen Rickard Memorial Fund
Richard Guy Memorial Fund	Sierra Singers Trust Fund
Robert A. Hanson Loan Fund	Marie Stover Memorial Fund

Colporteur

The student may earn a colporteur scholarship by selling Seventh-day Adventist publications. The church conference, the publishers, and the University join in arrangements for this provision.

Special scholarships  
and awards

Each year students enrolled on the La Sierra campus are considered for different scholarships and awards granted on the basis of one or more of the following criteria: academic excellence, citizenship, contribution to campus life, financial need. Information about the following scholarships and awards is available from the Office of the Dean:

Alumni Federation Award	Layne Foundation Scholarship
K. F. Ambs Leadership Award	George H. Mayr Foundation Scholarship
J. B. Bogle Memorial Scholarship	Lavina A. Northrop Award (preseminary)
California Congress of Parents and Teachers Scholarship	I. G. Ortner Scholarship
Farmers Insurance Group Scholarship	Riverside Foundation Heseman Scholarship
James Irvine Foundation Award	Harry Schrillo (La Sierra Alumni Association) Scholarship
Edmund C. Jaeger Award (biology)	President's Award
Judson Memorial Award	
Eliza L. Landeen Scholarship for Elementary Teachers	

#### BUDGETING FOR FINANCIAL AID

Budgeting for financial aid necessitates consideration of more than flat rates for tuition, board, and room. Books, supplies, travel, laundry, personal expense, commuting costs, and other miscellaneous expenses are included in the financial aid budget to establish need. Simply defined, *need* is the sum of the costs less the student's *and* the family's contribution toward the cost of education. The following annual cost budgets are used *for financial aid purposes only*:

Residence hall student, \$5,875

Offcampus student, \$5,375

Application for financial aid for each academic year (with required supporting documents) should be received at the Student Aid and Finance Office by June 1. Aid commitments are made for the year, one-third of the amount committed being applicable to each quarter.

Some funds may be available for students planning to enter the second or third quarters. Applications should be submitted two months in advance.



## STUDENT AFFAIRS

### STUDENT RESPONSIBILITY

Application to and enrollment in the University constitute the student's commitment to honor and abide by the practices and regulations stated in the announcements, BULLETINS, handbooks, and other published materials, and to maintain a manner that is mature and compatible with the University's function as an institution of higher learning.

The University was established to provide education in a distinctive Christian environment. No religious test is applied, but students are expected to respect the Sabbath and to honor the church standards and the ideals of the University. The prospective student has freedom to choose or reject these. But he must make that choice before he enrolls and then must abide by the decision while he is a student.

### FROM UNIVERSITY TO STUDENT

The University regards the student from a cosmopolitan and comprehensive point of view – (a) cosmopolitan in that historically the University's global mission has promoted bonds and opportunities in education and service without regard to sex, national or racial origin, or geographical line; and (b) comprehensive in that the University's concern for the welfare of the student has been traditionally an integrated concern for assisting the student in balanced development of his intellectual, emotional, physical, religious, and societal potentialities.

### GENERAL INFORMATION

Identification number	All students will be assigned University identification numbers by the Office of Admissions and issued identification cards. The seven-digit ID number must appear on all checks payable to the University, to ensure crediting to the proper account. The ID card will be used for admissions and records, library, health, and many other services. When the student withdraws from the University, the card is returned to the Student Aid and Finance Office.
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Counseling service	The official counseling agency for the University provides a service to students who desire help from professional counselors. This service, which is free and is on a voluntary basis, is designed to deal with a wide range of educational, vocational, premarital, marital, or other personal problems. No referral is necessary. The goal is to assist individuals to make maximum use of their intellectual and personal re-
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sources. Counseling is done in the strictest confidence, and no information is released except by the written request of the person counseled.

Physical fitness

Physical fitness is promoted by various recreational interests and by courses in gymnastics, field exercises, swimming, body building, lifesaving, and health instruction. An effort is made to interest each student in some recreational and health-building activity that he may carry over to enhance his future life.

Health

Living so as to maintain optimum health in the midst of the pressures of pursuing an education is an important part of student growth. The Health Service maintains a campus center where students may go for advice, prescription, and care.

Insurance coverage

The student's health insurance policy covers hospitalization for illness or accidents, including those that occur offcampus. The student should keep and refer to the insurance information folder provided him at registration. This informs him about what benefits the insurance provides and what services must be paid for. (See also the *Financial Information* section.)

Worship

Chapel services, residence hall religious appointments, and church worship services provide opportunities for personal enrichment. Choosing to come to this University implies the student's willingness to attend these appointments as part of the educational climate.

Transportation

The student is responsible for transportation arrangements and costs to off-campus assignments. The student who has a car must arrange for campus vehicle registration and parking permit. The law requires that adequate public liability insurance be carried by car owners, and the driver must have a valid California driver's license.

Property protection

Because the responsible adult has regard for the property of institutions and individuals, the mature student does his part to protect and safeguard University property, facilities, equipment, and supplies. The student is expected to assume responsibility for the safekeeping of personal belongings, using lockers where these are available and otherwise exercising appropriate attentiveness to the protection of his own property and that of others.

## CAMPUS ORGANIZATIONS

Many campus organizations offer opportunities for extracurricular activity, experience, and growth. The following list suggests the range of groups that regularly function on the campus, governing themselves under bylaws approved by the Student Affairs Committee:

African Student Association  
Agriculture Club  
Associated Students of Loma Linda University  
Astronomy Club  
Black Student Association  
Business Club  
Campus Ministries  
Chinese Club  
Consumer Related Sciences Club  
Deutscher Verein  
Equestrian Club  
Fencing Club  
Film Society  
Guild Student Group (American Guild of Organists)  
Hawaiian Club  
Heperec Club (health, physical education, recreation, youth services)  
Industrial Studies Club  
International Students Club  
Jurisprudence Club  
Le Cercle Francais  
Organizacion Latinoamericana Estudiantil (O. L. E.)  
Professional Education Association  
Ski Club  
Student Missionary Club  
Student Nurses' Association of California  
Student Physics Society

## STUDENT HANDBOOK

Explanations of many aspects of student life and detailed information concerning the University's expectations of its students are published in the *Student Handbook*, which is sent to every student admitted to the University.











# II

## General Requirements Departments of Instruction

### GENERAL REQUIREMENTS

On the recommendation of the faculty of the College, the University awards degrees and certificates to students who have satisfactorily completed the prescribed curriculums with a grade average of C (2.0), received no grade less than C in any course counted in the major program, and have met their financial obligations to the University.

A student who is continuously enrolled in the College for successive years may choose to meet the requirements for graduation listed in the BULLETIN of the year of his entrance or any subsequent year. If a student discontinues his enrollment for one calendar year, he must meet the requirements listed in the BULLETIN of the year of his reentrance or any subsequent year.

The student is responsible for informing himself of and satisfactorily meeting all requirements pertinent to his relationship with the University. The University reserves the right to make such changes as circumstances demand with reference to admission, registration, tuition and fees, attendance, curriculum requirements, conduct, academic standing, candidacy, and graduation. A copy of the current *Graduation Regulations* should be obtained from the Office of University Records early in the student's junior year.

## BACHELOR OF ARTS

A candidate for the Bachelor of Arts degree completes 190 units of coursework (60 upper division), of which 36 of the last 44 units, 16 units in the major program and 8 units in a minor program (if any), are completed in residence at Loma Linda University.

The curriculum for this degree consists of an appropriate major program and the following pattern of general studies.

**Skills** In basic intellectual and physical skills, 11 to 27 units of coursework, including:

*Communication skills*, 8-12 units (ENGL 101 and 102; or 124 with a grade of B or better; to be completed ordinarily within the first 48 units of coursework at the college level; otherwise one course per quarter until the requirement is fully met; SPCH 104);

*Computation skills*, 0-4 units (aptitude or waiver examination, or MATH 005);

*Movement skills*, 3 units (6 quarters of physical education activities); and

*Vocational/avocational skills*, 0-8 units (coursework, waiver examination, or other satisfactory demonstration of skill); 4 units, or the equivalent, outside the major.

**Life in society** In the traditional academic disciplines, 56 to 64 units of coursework, including:

*American history*, 4-8 units (HIST 156 or 176 and 157 or 177; or 165; or 256 and 257; determined by placement examination);

*Humanities*, 32 units distributed in four of six areas (with no more than 8 units of the major program applicable in any one area): history of civilization (4 units required if a student has not satisfactorily completed one full year of world history at the secondary level), literature, music, art, philosophy, ancient or modern language (8 units in one language required if a student has not satisfactorily completed two full years of one language at the secondary level);

*Natural sciences, mathematics, health*, 12-16 units (16 units required unless a student has satisfactorily completed one full year each of biology, chemistry, and physics at the secondary level) in two of five areas: biology, chemistry, physics, mathematics, health; biology or health required if a student has not satisfactorily completed at least  $\frac{1}{2}$  unit of health at the secondary level, but not more than 4 units may be in health); and

*Personal/social relationships*, 8 units (including at least one introductory course in behavioral science).

**Life under God** In religious studies, 20 units of coursework (8 upper division), of which 8 units are completed during the first year in residence and 4 units each succeeding year, including:

*In the Division of Religion*, 16 units (to be selected from courses listed in the College of Arts and Sciences BULLETIN as follows: RELB and RELT, all courses except 499; RELH, any one course except 499;

*In the major department*, 4 units (course 489).

**Recommended courses** A list of courses recommended to meet the general requirements is available from the Office of the Dean of the College.

## BACHELOR OF SCIENCE, BACHELOR OF MUSIC, BACHELOR OF SOCIAL WORK

A candidate for the Bachelor of Science, Bachelor of Music, or Bachelor of Social Work degree completes 190 units of coursework (60 upper division), of which



at least 36 units of the last 44 units, 16 units in the major program and 8 units in a minor program (if any), are completed in residence at Loma Linda University.

The curriculum for either of these degrees consists of an appropriate major program and the following pattern of general studies:

Skills In basic intellectual and physical skills, 11-27 units of coursework as defined for the Bachelor of Arts degree.

Life in society In the traditional academic disciplines, 24-32 units of coursework, including:

*American history*, 4-8 units (HIST 156 or 176 and 157 or 177; or 165; or 256 and 257; determined by placement examination);

*Humanities*, 12 units;

*Natural sciences, mathematics, health* OR *Personal/social relationships* (whichever is *not* included in the major program), 8 units; if neither area is included in the major program, a student completes a total of 12 units in the two areas, including at least 4 units in each.

Life under God In religious studies, 20 units of coursework (8 upper division) as defined above for the Bachelor of Arts degree.

### SPECIAL PROGRAMS

International dimensions Students who complete the 76-unit program in International Dimensions (see *Interdepartmental Courses*) are regarded as having met the following portions of the general requirements for a baccalaureate degree:

*Communication skills*, 12 units;

*Vocational/avocational skills*, 8 units;

*American history*, 4 units;

*Humanities*, 32 units;

*Natural sciences, mathematics, health*, 4 units;

*Personal/social relationships*, 8 units;

*Religion*, 8 units.

Western thought A student who completes the major program in Western thought (see Department of History and Political Science) is regarded as having met the general requirement in the humanities.

## ASSOCIATE IN ARTS

A candidate for the Associate in Arts degree completes 96 units of coursework, of which at least 24 of the last 32 units (12 units in the major program) are completed in residence at Loma Linda University.

The curriculum for this degree consists of an appropriate vocational program and the following pattern of general studies:

**Skills** In basic intellectual and physical skills, 10-18 units of coursework, including:

*Communication skills*, 8-12 units (ENGL 101 and 102; or 124 with a grade of B or better, to be completed ordinarily within the first 48 units of coursework at the college level; otherwise one course per quarter until the requirement is met; SPCH 104);

*Computation skills*, 0-4 units (aptitude or waiver examination, or MATH 005); and

*Movement skills*, 2 units (4 quarters of physical education activities).

**Life in society** In the traditional academic disciplines, 16 units of coursework, including:

*American history*, 4 units;

*Humanities*, 4 units;

*Natural sciences, mathematics, health*, 4 units; and

*Personal/social relationships*, 4 units.

**Life under God** In the Division of Religion, 12 units (to be selected from courses listed in the College of Arts and Sciences BULLETIN as follows: RELB and RELT, all courses except 499; RELH, any *one* course except 499).

## ASSOCIATE IN SCIENCE

A candidate for the Associate in Science degree completes 96 units of coursework, of which at least 24 of the last 32 units (12 units in the major program), are completed in residence at Loma Linda University.

The curriculum for this degree consists of an appropriate vocational program and the following pattern of general studies:

**Skills** In basic intellectual and physical skills, 10-18 units of coursework as defined for the Associate in Arts degree.

**Life in society** In the traditional academic disciplines, 16 units of coursework, including:

*American history*, 4 units;

*Humanities*; 4 units;

*Natural sciences, mathematics, health* OR *Personal/social relationships* (whichever is *not* included in the vocational program), 4 units.

**Life under God** In religious studies, 12 units of coursework as defined above for the Associate in Arts degree.



## CERTIFICATE

A student in a certificate program completes at least 48 units of coursework, of which at least 12 of the last 16 units are completed in residence at Loma Linda University.

The curriculum for a certificate consists of the specific requirements of the particular program; religion, 4 units; eligibility for ENGL 101 (remedial coursework, if indicated by placement examination).





## DEPARTMENTS OF INSTRUCTION

For convenience of reference, the areas of instruction are listed alphabetically.

### CLASSIFICATION OF COURSES

**Prefix** The four-letter prefix to each course number indicates the department or subject area as follows:

	SUBJECT	DEPARTMENT
ACCT	Accounting	Business and Economics
ADJS	Administration of Justice	Division of Behavioral Sciences
AGRI	Agriculture	Agriculture
ANTH	Anthropology	Division of Behavioral Sciences
ART	Art	Art
AUTO	Automotive Technology	Industrial Studies
AVIA	Aviation	Industrial Studies
BIOL	Biology	Biology
BIOM	Biomathematics	Mathematical Sciences, Graduate School
BUAD	Management	Business and Economics
BUED	Business Education	Secretarial and Business Education
CHEM	Chemistry	Chemistry
CHIN	Chinese	Modern Languages
CFSC	Child/Family Education	Consumer Related Sciences
COMM	Communication	Communication
CMME	Communication Media	Communication
CNST	Construction	Industrial Studies
CPTG	Computing	Mathematics
DAPR	Data Processing	Business and Economics
DRFT	Drafting	Industrial Studies
ECON	Economics	Business and Economics
EDCE	Counselor Education	Counselor Education, School of Education
EDCI	Curriculum and Instruction	Curriculum and Instruction, School of Education
EDFO	Foundations of Education	Foundations of Education, School of Education
EHIS	Earth History	Biology
ENGL	English	English
ENGR	Engineering	Physics
ENSL	English as a Second Language	Modern Languages
ESCI	Earth Science	Interdepartmental Courses
ENVH	Environmental and Tropical Health	Environmental and Tropical Health, School of Health
EPDM	Biostatistics and Epidemiology	Biostatistics and Epidemiology, School of Health
FDNT	Foods and Nutrition	Consumer Related Sciences
FREN	French	Modern Languages
GRMN	German	Modern Languages
HMEC	Home Economics	Consumer Related Sciences

HIST	History	History and Political Science
INDM	International Dimensions	Interdepartmental Courses
INDS	Industrial Studies	Industrial Studies
INTD	Interdisciplinary Studies	Interdepartmental Courses
INTR	Interior Design	Consumer Related Sciences
JAPN	Japanese	Modern Languages
LIBR	Library Science	Interdepartmental Courses
LING	Linguistics	Modern Languages
MATH	Mathematics	Mathematics
MDLG	Modern Language	Modern Languages
MEST	Middle Eastern Studies	Middle Eastern Studies, Graduate School
MFAM	Marriage and Family Counseling	Marriage and Family Counseling, Graduate School
MICR	Microbiology	Microbiology, Graduate School
MUCT	Music Composition and Theory	Music
MUED	Music Education	Music
MUHL	Music History and Literature	Music
MUPF	Music Performance	Music
MURE	Sacred Music	Music
NRSG	Nursing	Nursing, School of Nursing
PEAC	Physical Education Activity	Physical Education
PETH	Physical Education Theory	Physical Education
PHIL	Philosophy	History, Interdepartmental Courses
PHSL	Physiology	Physiology, Graduate School
PHTO	Photography	Industrial Studies
PHYS	Physics	Physics
PLSC	Political Science	History and Political Science
PSYC	Psychology	Division of Behavioral Sciences
RDNG	Reading Improvement	English
RELB	Religion, Biblical Studies	Division of Religion
RELH	Religion, Historical Studies	Division of Religion
RELL	Religion, Biblical Language	Division of Religion
RELM	Religion, Mission Studies	Division of Religion
RELP	Religion, Professional Studies	Division of Religion
RELT	Religion, Theological Studies	Division of Religion
RUSS	Russian	Modern Languages
SCNC	Science	Interdepartmental Courses
SECR	Secretarial Science	Secretarial and Business Education
SOCI	Sociology	Division of Behavioral Sciences
SOSR	Social Work	Division of Behavioral Sciences
SPAN	Spanish	Modern Languages
SPCH	Speech	Communication
SPPA	Speech Pathology and Audiology	Communication
STAT	Statistics	Mathematical Sciences, Graduate School
TXTL	Textiles and clothing	Consumer Related Sciences

Number      The course number indicates the comparative level of difficulty, and the class standing of the students for which the course is offered:

- 001-099 Remedial
- 101-299 Lower division (freshman/sophomore)
- 301-499 Upper division (junior/senior)
- 501-699 Graduate

## DEPARTMENT OF AGRICULTURE

Chairman	JOHN E. CARR, Associate Professor of Agriculture M.S. Michigan State University
Faculty	C. ARNOLD BORAM, Associate Professor of Agriculture M.ED. University of Missouri W. FRED RILEY, Associate Professor of Agriculture PH.D. University of Arizona DALE L. ANDERSON, Assistant Professor of Agriculture M.S. Oklahoma State University GEORGE R. BURGDORFF, Assistant Professor of Agriculture M.A. Andrews University RICHARD L. PETERSEN, Assistant Professor of Agriculture M.A. Loma Linda University MARLIN E. ELKINS, Instructor in Agriculture B.S. Pacific Union College HARRY M. GRUBBS, Instructor in Agriculture B.S. Andrews University DOUGLAS F. HAVENS, Instructor in Agriculture M.A. Loma Linda University
Collaborating faculty	CLYDE L. WEBSTER, Assistant Professor of Chemistry PH.D. Colorado State University
Visiting faculty	RICHARD R. HARWOOD, Associate Professor of Agriculture PH.D. Michigan State University

**Objectives** The continuous operation of full-scale agricultural, poultry, and dairy businesses on the 400-acre farm on the La Sierra campus of the University offers opportunities for the student who wishes to prepare for vocations in these areas or to pursue further studies in agriculture.

The general student may also gain an understanding of these pursuits and their significance to society, as well as some limited skill in farming.

Because the farm is managed by the faculty of the Department of Agriculture, a student has an opportunity to combine practical experience with theoretical understanding in each phase of farm operation.

**Preparation for teaching** A student preparing to teach agriculture at the secondary level should plan to qualify for teaching credentials and during his freshman or sophomore year should consult the credentials adviser in the School of Education for specific information.

A graduate program leading to the Master of Arts in the teaching of agriculture is described in the BULLETIN of the School of Education. This program includes AGRI 514, 515, 517, an additional 33 units of postbaccalaureate study; and fulfillment of the requirements for a secondary teaching credential. A student who has included the appropriate coursework in professional education (including directed teaching) in his undergraduate curriculum may be able to complete the requirements for the master's degree in an additional year of study.



## BACCALAUREATE MAJOR PROGRAMS

A student majoring in a program in agriculture is required to work as an employee of the department (in addition to his coursework) for a period of time determined by the faculty on the basis of his previous farm experience.

### General agriculture

A student majoring in general agriculture follows the curriculum for the Bachelor of Science degree (see *General Requirements*) and 66 units of coursework in agriculture, including AGRI 104, 105, 114, 204, 205, 214, 216, 224, 234, 235, 324, 334, 344, 354, 436, 454, 484. Cognate requirements are AUTO 234 or 334; BIOL 101, 102, 103; CHEM 101, 102.

### Livestock production

A student majoring in livestock production follows the curriculum for the Bachelor of Science degree (see *General Requirements*) and 62 units of coursework in agriculture, including AGRI 105, 114, 204, 205, 234, 235, 324, 334, 335, 336, 354, 434, 436, 437, 454, 484. Cognate requirements are AUTO 234 or 334; BIOL 101, 102, 103; CHEM 101, 102.

### Plant production

A student majoring in plant production follows the curriculum for the Bachelor of Science degree (see *General Requirements*) and 66 units of coursework in agriculture, including AGRI 104, 105, 204, 205, 214, 215, 216, 224, 235, 304, 324, 344, 345, 354, 436, 454, 484. Cognate requirements are AUTO 234 or 334; BIOL 101, 102, 103; CHEM 101, 102.

### Intensive food production

A student majoring in intensive food production follows the curriculum for the Bachelor of Science degree (see *General Requirements*) and 80 units of coursework in agriculture and biology, including AGRI 104, 105, 114, 204, 224, 234, 235, 341, 342, 343, 354; BIOL 101, 102, 103, 185, 314, 387, 475, 478, 485. Cognate requirements are CHEM 101, 102, 103; 4 units from AUTO 234, 334 or INDS 171, 172; MATH 124. Recommended electives are AGRI 205, 304; BIOL 447; FDNT 426; PSYC 104 or 105, 307.

## MINOR SEQUENCE

A minor in agriculture is 30 units of coursework (8 upper division) selected in consultation with the departmental adviser.

## ASSOCIATE DEGREE PROGRAM

### Agriculture

A student in the associate degree program in agriculture follows the curriculum for the Associate in Science degree (see *General Requirements*) and 56 units of coursework in agriculture, including AGRI 104, 105, 114, 204, 224, 234, 235, 299 (4 units in each of four areas), 324, 334, 354, 484. A cognate requirement is AUTO 234.

## COURSES

Lower division	<b>AGRI 104 Vegetable Gardening</b>	<b>4 units</b>
	First quarter: cool season crops, propagation, culture methods, marketing. Third quarter: warm season crops, plant production, propagation, culture, producing, marketing. Three class hours, one laboratory. May be repeated once for additional credit.	
	<b>AGRI 105 Basic Soil Science</b>	<b>4 units</b>
	Genesis, physical and chemical properties, and classification of soils. Three class hours, one laboratory.	
	<b>AGRI 108 Agriculture Skills for Country Living</b>	<b>4 units</b>
	Practical aspects of gardening, greenhouse culture, plant propagation, and care of farm animals.	
	<b>AGRI 114 Poultry Husbandry</b>	<b>4 units</b>
	Avian anatomy and physiology as it affects production, breeds, breeding, strain selection, incubation of poultry, nutrition, feeds and microingredient additives in poultry feeding. Sanitation; prevention, control, and treatment of diseases. Offered alternate years.	
	<b>AGRI 204 Field Crops</b>	<b>4 units</b>
	Distribution, cultural methods, and economic importance of field crops. Field trips as needed. Offered alternate years.	
	<b>AGRI 205 Forage Crops</b>	<b>4 units</b>
	Economical use of land for other than field crops. Providing year-around pasture. Field trips as needed. Offered alternate years.	
	<b>AGRI 214 Horticulture I</b>	<b>4 units</b>
	The plant; plant requirements; culture, growth, and propagation. Three class hours, one laboratory.	
	<b>AGRI 215 Horticulture II</b>	<b>4 units</b>
	Small and large fruit culture; individual fruits.	
	<b>AGRI 216 Greenhouse Culture</b>	<b>4 units</b>
	Scheduling, planning, and propagation of horticulture plants. Experience in growing and management of plants under glass. Preparation and handling of potting and propagation mixes.	
	<b>AGRI 224 Farm Machinery</b>	<b>4 units</b>
	Selection, operation, and use of modern farm machinery and implements. Two class hours, two laboratories. Offered alternate years.	
	<b>AGRI 234 Animal Husbandry I</b>	<b>4 units</b>
	History, breeds, characteristics, adaptability, judging, and products of farm animals.	
	<b>AGRI 235 Farm Analysis and Accounting</b>	<b>4 units</b>
	Fundamental principles of accounting as applied to agricultural practices. Analysis of farm data for management use.	
	<b>AGRI 299 Directed Study</b>	<b>1-4 units</b>
	Practical experience: farm, creamery, livestock, poultry. May be repeated in a different area for additional credit.	

Upper division	<p><b>AGRI 304 Soil Management and Fertility</b> 4 units Essential principles of maintaining and testing soil fertility. Management principles applied to physical improvement. Three class hours, one laboratory. Offered alternate years. Prerequisite: AGRI 105.</p> <p><b>AGRI 314 Poultry Production</b> 4 units Principles and practices: ranch layout, housing system, brooding, production programs, record keeping. Field trips. Offered alternate years. Prerequisite: AGRI 114.</p> <p><b>AGRI 324 Irrigation</b> 4 units Methods of application; crop requirements and water supply in the Southwest and other arid regions. Three class hours, one laboratory. Offered alternate years.</p> <p><b>AGRI 334 Animal Husbandry II</b> 4 units Care and management of farm animals, marketing, sanitation, and diseases.</p> <p><b>AGRI 335 Dairy Cattle Management</b> 4 units Economic aspects, selection, breeding, feeding, sanitation, diseases, and management of dairy cattle. Offered alternate years.</p> <p><b>AGRI 336 Dairy Industry</b> 4 units Common practices of processing and testing milk products. Three class hours, one laboratory. Offered alternate years.</p> <p><b>AGRI 337 Floriculture</b> 4 units Identification, propagation, and use of potted and outdoor flowers in the household and in landscape design. Especially for flower lovers and homeowners. Laboratory.</p> <p><b>AGRI 338 Landscape Design and Practice</b> 4 units Recognition, selection, and adaptation of landscape materials to fit into the environment.</p> <p><b>AGRI 341, 342, 343 Intensive Food Production</b> 4, 4, 4 units Efficient methods of food production; innovative and productive procedures utilized under various soil and climatic conditions. Three quarters required in sequence.</p> <p><b>AGRI 344 Introduction to World Crops</b> 4 units Relationship between man and plant; plant environment, crop production, plant industry, the marketplace. Offered alternate years.</p> <p><b>AGRI 345 Plant Propagation</b> 4 units Methods of propagating useful and ornamental plants. Three class periods, one laboratory period per week.</p> <p><b>AGRI 354 Farm Management I</b> 4 units The modern farm in relation to management concepts, cost analysis, government involvement, and general farm practices in ecology and environment.</p> <p><b>AGRI 355 Tropical Agriculture</b> 4 units Agricultural practices of the small farmer in tropical areas. Methods of increasing yield and quality of crops in tropical climates.</p> <p><b>AGRI 356 Agricultural Biometrics</b> 4 units Application of statistical analysis to agricultural experiments. Standard error, statistical significance, sampling, coefficient of variation and regression as applied to agricultural situations.</p> <p><b>AGRI 414 Soil Analysis</b> 4 units Methods of soil analysis as carried out in the laboratory and field. Emphasis on macronutrients: nitrogen, phosphorus, potassium, calcium, magnesium, and sulfur. Interpretation of soil analysis in terms of crop needs and determination of fertilizer needs for profitable production.</p>
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	<b>AGRI 424 Plant Breeding</b>	<b>4 units</b>
	Methods of improving various crops through application of the science of genetics. Application to the major world food crops.	
	<b>AGRI 434 Animal Nutrition</b>	<b>4 units</b>
	Principles of nutrition of farm animals; application to feeding practice. Offered alternate years.	
	<b>AGRI 435 Poultry Management</b>	<b>4 units</b>
	Experience with poultry and facilities. Laboratory only. Prerequisite: AGRI 114.	
	<b>AGRI 436 Agriculture Economics and Marketing</b>	<b>4 units</b>
	Current economic and marketing practices in relation to the economy. Offered alternate years. Prerequisite: AGRI 235.	
	<b>AGRI 437 Artificial Insemination of Cattle</b>	<b>4 units</b>
	Fundamental techniques used in the artificial breeding of cattle. Discussion of physiological and disease problems related to reproduction. Prerequisite: AGRI 334, 335.	
	<b>AGRI 454 Farm Management II</b>	<b>4 units</b>
	Actual supervision of farm operations. A full-time responsibility requiring appropriate allowances in the student's schedule. Laboratory only. Prerequisite: AGRI 354.	
	<b>AGRI 484 Seminar in Agriculture</b>	<b>1 unit</b>
	Two units required for credit.	
	<b>AGRI 489 Adventist Philosophy of Agriculture</b>	<b>4 units</b>
	Agriculture viewed from the perspective of biblical and religious teachings; concepts of moral worth; the balanced person. Does not apply toward a major or minor. Offered alternate years.	
	<b>AGRI 499 Directed Study</b>	<b>1-4 units</b>
Graduate	<b>AGRI 509 Plant Analysis</b>	<b>4 units</b>
	Determination of nutrients in plants and comparison of results with current norms. Utilization of analysis results to recommended optimum fertility treatment.	
	<b>AGRI 514 Soil Chemistry</b>	<b>4 units</b>
	Methods of soil analysis; diagnosis of soil problems. Prerequisite: CHEM 111, 112, 113; or approval of the teacher.	
	<b>AGRI 515 Nutrition of Horticultural Plants</b>	<b>4 units</b>
	Nutrient elements; their absorption and utilization. Detection and correction of plant deficiencies.	
	<b>AGRI 516 Soil Microbiology</b>	<b>4 units</b>
	Culture of soil microorganisms and their effect on plant production. Prerequisite: BIOL 101, 102, 103.	
	<b>AGRI 517 Crop Fertilization and Protection</b>	<b>4 units</b>
	Composition and use of organic and chemical fertilizers, herbicides, and pesticides. Hazards and precautions.	

## DEPARTMENT OF ART

Chairman	ROGER A. CHURCHES, Associate Professor of Art M.F.A. Rochester Institute of Technology
Faculty	AGNES R. EROH, Professor of Elementary Education, School of Education ED.D. Boston University
	ROBERT H. SEYLE, Assistant Professor of Art M.F.A. Otis Art Institute

The study of art combines an academic comprehension of art as a historical expression of human ideas and ideals with the development of skills for contemporary visual communication and expression.

**Objectives** The objectives of the department are to prepare artists for a wide variety of professions related to the visual arts and to introduce general students to the experience of visual art.

The department believes that the Christian artist should intuitively reflect the visual order of the created universe, not by a rote copying of nature, but by a close observation and analysis of natural forms.

**Preparation for teaching** A student preparing to teach art at the elementary or secondary level completes the visual arts program outlined below. In addition, he should plan to qualify for teaching credentials, and during his freshman or sophomore year he should consult the credentials adviser in the School of Education for specific information concerning requirements.

A program leading to the Master of Arts in the teaching of art is described in the BULLETIN of the School of Education.

### BACCALAUREATE MAJOR PROGRAMS

**Visual arts** A student majoring in art completes the general requirements for the Bachelor of Arts degree (see *General Requirements*) and 50 units (28 upper division) of coursework in art, including ART 111, 112, 305, 306, 307, 496 (2 units); drawing, 6 units; painting, graphic design, and printmaking, 8 units; crafts, ceramics, and sculpture, 8 units.

**Studio specialization** A student interested in specializing in a studio area completes the general requirements for the Bachelor of Science degree and one of the following programs:  
Program A offers an emphasis in painting, design, printmaking, ceramics, or sculpture, with 60 units (30 upper division) of coursework in art, including ART 111, 112, 305, 306, 307, 495 (8 units); drawing, 8 units, 496 (2 units); area of specialization, 12 units.

Program B offers an emphasis in photography, with 54 units (32 upper divi-

sion) of coursework in art, including ART 111, 112, 305, 306, 307, 495 (4 units), 496 (2 units); drawing, 4 units; PHTO 224, 324, 325, 326, 424, 425; art seminar, 2 units.

#### Graphic design

A student majoring in graphic design completes the general requirements for the Bachelor of Science degree (see *General Requirements*) and 60 units (30 upper division) of coursework in art, including ART 111, 112, 244, 305, 306, 307, 344 (8 units), 496 (2 units); drawing, 12 units.

#### Biological and medical illustration

A student majoring in biological and medical illustration completes the general requirements for the Bachelor of Science degree (see *General Requirements*) and 60 units (30 upper division) of coursework in art, including ART 111, 112, 244, 305, 306, 307, 325 (6 units), 345 (4 units), 385 (8 units), 496 (2 units), 497 (8 units); drawing, 6 units; painting, 6 units. Cognate requirements are BIOL 101, 102, 103, 111, 326, 434; PHTO 224, 324.

### MINOR SEQUENCE

A minor in art is 30 units (12 upper division) of coursework including ART 205, selected in consultation with the department chairman.

### COURSES

Lower division	ART 111, 112 Design	4, 4 units
	Elements and principles of design.	
	ART 113 Three-Dimensional Design	4 units
	Design problems; analysis and evaluation.	
	ART 204 Introduction to Studio Art	2-4 units
	Art materials, processes, and concepts. Does not apply toward a major in art.	
	ART 205 Introduction to Art	4 units
	Art and its role in society.	
	ART 224 Drawing	2-4 units
	Object drawing, including the human figure, in various media. May be repeated for additional credit to a maximum of 6 units.	
	ART 234 Painting	2-4 units
	Varied content from quarter to quarter, with specific areas listed in the class schedule (water color, acrylics, oil, tempera, casein, gouache, etc.). May be repeated for additional credit to a maximum of 6 units.	
	ART 244 Basic Graphic Design	2-4 units
	Concepts and techniques of visual imagery; preparation of materials for printing, posters, transparencies for projection, etc. May be repeated for additional credit to a maximum of 6 units.	
	ART 254 Printmaking	2-4 units
	Varied content from quarter to quarter, with specific areas listed in the class schedule (serigraphy, relief, intaglio, lithography, etc.). May be repeated for additional credit to a maximum of 6 units.	



Upper division	<b>ART 264 Crafts</b>	<b>2-4 units</b>
	Varied content from quarter to quarter, with specific areas listed in the class schedule (fibers, weaving, textile printing and dyeing, mosaics, plastic casting and fabrication, wood carving, etc.). May be repeated with new content for additional credit.	
	<b>ART 274 Ceramics</b>	<b>2-4 units</b>
	Hand and wheel construction of various pottery forms; mixing and application of glazes. May be repeated for additional credit to a maximum of 6 units.	
	<b>ART 284 Sculpture</b>	<b>2-4 units</b>
	Clay, stone, plaster, and other materials. May be repeated for additional credit to a maximum of 6 units.	
	<b>ART 299 Directed Study</b>	<b>1-4 units</b>
	Independent project in studio or art history. Prerequisite: Consent of the department chairman.	
	<b>ART 304 Development of Aesthetic Awareness</b>	<b>2 units</b>
	Aesthetic development in relation to mental, social, and physical growth from the scribbling child to maturity; the meaning of art at various stages of growth; the importance of aesthetics in the development of values. Prerequisite: ART 204 or equivalent.	
	<b>ART 305, 306, 307 Art and Ideas</b>	<b>4, 4, 4 units</b>
	Comparison of cultures: art forms and symbols. First quarter: ancient to Renaissance; second quarter: Renaissance through 18th century; third quarter: 19th and 20th centuries.	
	<b>ART 314 Advanced Three-Dimensional Design</b>	<b>2-4 units</b>
	May be repeated for additional credit to a maximum of 6 units. Prerequisite: ART 113 or consent of the department chairman.	
	<b>ART 324 Advanced Drawing</b>	<b>2-4 units</b>
	May be repeated for additional credit. Prerequisite: ART 224 or consent of the department chairman.	
	<b>ART 325 Drawing Human Anatomy</b>	<b>2-4 units</b>
	Drawing principles and skills related to human anatomy with emphasis on anatomical structure and function. May be repeated for additional credit. Prerequisite: 6 units of drawing or consent of instructor.	
	<b>ART 334 Advanced Painting</b>	<b>2-4 units</b>
	May be repeated for additional credit. Prerequisite: ART 234 or consent of the department chairman.	
	<b>ART 344 Advanced Graphic Design</b>	<b>2-4 units</b>
	Conceptual problem solving in contemporary visual communication. May be repeated for additional credit. Prerequisite: ART 244 or consent of the department chairman.	
	<b>ART 345 Rendering</b>	<b>2-4 units</b>
	Techniques in visual representation for advertising. Prerequisite: ART 244.	
	<b>ART 346 Illustration</b>	<b>2-4 units</b>
	Exploration of contemporary techniques and concepts. Prerequisite: ART 244.	
	<b>ART 354 Advanced Printmaking</b>	<b>2-4 units</b>
	May be repeated for additional credit. Prerequisite: ART 254 or consent of the department chairman.	
	<b>ART 364 Advanced Crafts</b>	<b>2-4 units</b>
	May be repeated for additional credit. Prerequisite: ART 264 or consent of the department chairman.	

- ART 374 Advanced Ceramics** 2-4 units  
May be repeated for additional credit.  
Prerequisite: ART 274 or consent of the department chairman.
- ART 384 Advanced Sculpture** 2-4 units  
May be repeated for additional credit.  
Prerequisite: ART 284 or consent of the department chairman.
- ART 385 Modelmaking** 2-4 units  
Exploration of techniques on building scale models for use by architects, engineers, and designers. May be repeated for additional credit.
- ART 489 The Artist and Christian Symbolism** 4 units  
Art and its relationship to Christian belief and experience. Does not apply toward a major or minor.
- ART 495 Senior Project** 4 units  
Relating to the student's area of specialization. May be carried over two quarters for a maximum of 8 units. Written report required. Exhibition of work required.
- ART 496 Art Seminar** 1-2 units  
Various topics from quarter to quarter. May be repeated for additional credit.
- ART 497 Practicum** 4-8 units  
On-the-job training experience with a graphic production studio. May be repeated one quarter. By permission of department only.
- ART 499 Directed Study** 1-4 units  
Independent project in studio or art history.  
Prerequisite: Consent of the department chairman.
- Graduate ART 504 Problem(s) in Studio Art** 1-4 units  
For graduate art students; may be repeated for additional credit to a maximum of 12 units.



**DIVISION OF  
BEHAVIORAL SCIENCES**

**Director** ANEES A. HADDAD, Professor of Sociology  
PH.D. University of Southern California

**PROGRAM IN ADMINISTRATION OF JUSTICE**

**Coordinator** VERN R. ANDRESS, Associate Professor of Psychology  
PH.D. United States International University

**Lecturers** CARL F. JORDON, Lecturer in Administration of Justice  
J.D. Cleveland-Marshall School of Law  
JOSEPH S. PRESHA, Lecturer in Administration of Justice  
M.P.A. University of Southern California  
DANIELLE WUCHENICH, Lecturer in Administration of Justice  
J.D. Boston University

**DEPARTMENT OF ANTHROPOLOGY AND SOCIOLOGY**

**Chairman** JOHN W. ELICK, Professor of Anthropology; Curator, Anthropological Museum  
PH.D. University of California, Los Angeles

**Faculty** WILLARD R. CENTERWALL, Professor of Anthropology  
M.D. Yale University

MOLLEURUS COUPERUS, Professor of Physical Anthropology  
M.D. Loma Linda University

ANEES A. HADDAD, Professor of Sociology  
PH.D. University of Southern California

JAMES H. STIRLING, Professor of Anthropology  
PH.D. University of California, Los Angeles

THEADORE J. CHAMBERLAIN, Associate Professor of Religion and Sociology  
D.MIN. School of Theology at Claremont

CHARLES W. TEEL, JR., Associate Professor of Religion and Sociology  
PH.D. Boston University

MONTE R. ANDRESS, Assistant Professor of Anthropology  
M.A. California State University, San Diego

MATILDA N. BARKER, Instructor in Sociology  
M.A. Loma Linda University

WON K. YOON, Assistant Professor of Sociology  
PH.D. Louisiana State University

**Collaborating faculty** ROBERT C. DARNELL, Professor of Islamics  
PH.D. University of Michigan

KENNETH L. VINE, Professor of Biblical Studies and Archaeology  
PH.D. University of Michigan

**Lecturers** JUDITH R. DIMMIG, Lecturer in Sociology  
M.A. Loma Linda University  
ROBERT E. FORD, Lecturer in Anthropology and Geography  
M.A., M.P.H., Loma Linda University  
JUDY G. STOMSVIK, Lecturer in Anthropology  
M.A. Loma Linda University



# DEPARTMENT OF MARRIAGE AND FAMILY COUNSELING

- Chairman** ALBERTA MAZAT, Assistant Professor of Marriage and Family Counseling  
M.S.W. University of Denver
- Faculty** ANEES A. HADDAD, Professor of Sociology  
PH.D. University of Southern California
- FRED H. OSBOURN, Professor of Marriage and Family Counseling, Religion  
PH.D. School of Theology at Claremont
- CLIFFORD C. ACHORD, Associate Professor of Marriage and Family Counseling  
PH.D. University of Northern Colorado
- THADDEUS C. ACHORD, Assistant Professor of Psychiatry  
M.D. Loma Linda University
- S. DOUGLAS MOLINE, Assistant Professor of Marriage and Family Counseling (on leave)  
M.DIV. Andrews University  
M.S. Loma Linda University
- MARY S. MOLINE, Assistant Professor of Marriage and Family Counseling (on leave)  
D.H.SC. Loma Linda University
- WON K. YOON, Assistant Professor of Sociology  
PH.D. Louisiana State University
- Collaborating faculty** WILBER ALEXANDER, Professor of Theology and Clinical Ministry  
PH.D. Michigan State University
- HARRISON S. EVANS, Professor of Psychiatry  
M.D. Loma Linda University
- PAUL C. HEUBACH, Professor of Applied Theology  
L.L.D. (Hon.) Walla Walla College
- L. FRANCES PRIDE, Professor of Nursing  
PH.D. University of Maryland
- VERN R. ANDRESS, Associate Professor of Psychology  
PH.D. United States International University
- R. RICHARD BANKS, Associate Professor of Psychology  
PH.D. University of Notre Dame
- M. JERRY DAVIS, Associate Professor of Religion and Pastoral Counseling  
REL.D. School of Theology at Claremont
- EDWARD T. HIMENO, Associate Professor of Psychiatry  
M.D. Loma Linda University
- PETER G. STRUTZ, Associate Professor of Psychology  
PH.D. University of Alberta
- JUNE L. HORSLEY, Assistant Professor of Social Work  
M.S.W. University of Denver
- JEROME W. H. NISWONGER, Associate Professor of Gynecology and Obstetrics  
M.D. Loma Linda University
- KENNETH MCGILL, Assistant Professor of Gynecology and Obstetrics  
M.D. Loma Linda University
- J. MICHAEL NELSON, Assistant Professor of Psychiatry  
M.D. Loma Linda University
- HUGO RIFFEL, Assistant Professor of Gynecology and Obstetrics  
M.D. Montevideo Medical School, Uruguay
- JAMES F. DYER, JR., Instructor in Psychiatry  
M.S.W. West Virginia University

# PROGRAM IN MIDDLE EASTERN STUDIES

- Coordinator ANEES A. HADDAD, Professor of Sociology  
PH.D. University of Southern California
- Collaborating faculty ROBERT C. DARNELL, Professor of Islamics  
PH.D. University of Michigan
- JOHN W. ELICK, Professor of Anthropology  
PH.D. University of California, Los Angeles
- A. GRAHAM MAXWELL, Professor of New Testament  
PH.D. University of Chicago
- JACK W. PROVONSHA, Professor of Philosophy of Religion and Christian Ethics  
M.D. Loma Linda University  
PH.D. Claremont Graduate School
- KENNETH L. VINE, Professor of Biblical Studies and Archaeology  
PH.D. University of Michigan
- Lecturers BEN D. ARSHAT, Lecturer in History and Arabic  
M.A. Andrews University
- SALIM MAJEED ELIAS, Lecturer in Arabic  
B.A. Middle East College

# DEPARTMENT OF PSYCHOLOGY

- Chairman VERN R. ANDRESS, Associate Professor of Psychology  
PH.D. United States International University
- Faculty R. RICHARD BANKS, Associate Professor of Psychology  
PH.D. University of Notre Dame
- PETER G. STRUTZ, Associate Professor of Psychology  
PH.D. University of Alberta
- ROLANDO R. HENRY, Assistant Professor of Psychology  
PH.D. Vanderbilt University
- CAROLYN R. HOWARD, Assistant Professor of Psychology  
PH.D. West Virginia University
- JERRY W. LEE, Assistant Professor of Psychology  
PH.D. University of North Carolina
- ADENY S. WOODS, Assistant Professor of Psychology  
M.A. Catholic University of America
- HAROLD I. SHARNACK, Assistant Professor of Psychology  
M.A. Wyoming University
- Collaborating faculty SHIROU KUNIHIRA, Professor of Psychology, School of Dentistry  
PH.D. Stanford University
- JOHN M. REEVES, Associate Professor of Preventive and Community Dentistry,  
School of Dentistry  
PH.D. University of Southern California
- S. ALBERTA MAZAT, Assistant Professor of Marriage and Family Counseling, and Social  
Work  
M.S.W. University of Denver
- Lecturer DAVID M. COREY, Lecturer in Psychology  
M.A. San Diego State University

## DEPARTMENT OF SOCIAL WORK

- Chairman JUNE L. HORSLEY, Assistant Professor of Social Work  
m.s.w. University of Denver
- Faculty MAMIE M. OZAKI, Assistant Professor of Social Work  
m.s.w. University of Southern California
- Collaborating faculty S. ALBERTA MAZAT, Assistant Professor of Marriage and Family Counseling, Social Work  
m.s.w. University of Denver
- Lecturers LOTTIE A. HOLT, Lecturer in Social Work  
m.s.w. San Diego State University  
RONALD G. HUSTON, Lecturer in Social Work  
m.s.w. Fresno State University  
EVALINE E. WEST, Lecturer in Social Work  
m.s.w. San Diego State University
- Field personnel LEONA M. ALTMILLER  
m.s.w. San Diego State University  
Loma Linda University Medical Center, Department of Psychiatry
- PAT BUDO  
m.s.w. San Diego State University  
Inland County Developmental Disabilities Services
- MICHAEL T. CAREY  
m.s.w. University of Southern California  
Webley's Group Home
- DONNA M. DAHL  
m.s.w. Arizona State University  
Riverside County Department of Health, Children's Mental Health Services
- JAMES F. DYER, JR.  
m.s.w. West Virginia University  
Loma Linda University Medical Center, Department of Psychiatry
- SATOMI F. EDELHOFER  
m.s.w. University of California, Berkeley  
San Bernardino County Mental Health Department
- MARLYNA M. HIDALGO  
m.s.w. University of Puerto Rico  
Patton State Hospital
- RYMER D. HOEY  
m.s.w. University of Nebraska  
Loma Linda University Medical Center
- JOYCE A. JAMES  
m.s.w. San Diego State University  
Inland County Developmental Disabilities Services
- PAX LOYA  
m.s.w. University of Washington  
Adoption Services, Department of Public Social Services
- WILLIAM NEWELL  
m.s.w. University of California, Los Angeles  
San Bernardino County Mental Health Department
- DAVID RIESTER  
m.s.w. University of Denver  
Inland County Developmental Disabilities Services



FESTUS O. WEBLEY

M.S.W. University of Southern California  
Riverside County Department of Public Social Services

JANE G. WHITEHEAD

M.S.W. Florida State University  
Patton State Hospital

JANE R. ZEIGER

M.S.W. University of California, Berkeley  
Riverside County Department of Health, Children's Mental Health

**Objectives** The Division of Behavioral Sciences aims to promote personal growth in effective Christian living, broader understanding of the organization and function of society, and development of perspective from the comparison of different cultures. An understanding of the factors that promote personal adjustment and the processes which result in cultural stability or change, a knowledge of the effects of contact between peoples and cultures, an awareness of current social movements, a sensitivity to human worth and dignity, and an acquaintance with the background of social and cultural theory and practice are essential for a liberal education.

The student interested in the behavioral sciences may prepare for a career or further study in psychology, teaching, special education, corrections (administration of justice), probation, juvenile problems, social work, speech therapy, theology, personnel administration, residence hall deanship, or marriage, family, and child counseling.

Studies in behavioral sciences contribute to an increased understanding of the human factors involved in such professions as dentistry, medicine, nursing, occupational therapy, the ministry, education, public health, public affairs, business, and many other areas.

A baccalaureate degree in one of the behavioral sciences prepares the student for graduate study in such areas as marriage and family counseling, administration of justice, psychology, sociology, anthropology, social work, and other specialized areas in the behavioral sciences. Many vocations now require at least one year of graduate work.

In addition to the courses offered by the Division of Behavioral Sciences, certain courses offered by other departments in the University may be applied to the major, in consultation with the appropriate department chairman or program coordinator.

**Graduate programs**

Graduate programs leading to the Master of Arts degree in sociology, anthropology, Middle Eastern studies, and to the Master of Science degree in marriage and family counseling are described in the BULLETIN of the Graduate School.

## BACCALAUREATE MAJOR PROGRAMS

### Administration of justice

The program in administration of justice is designed for students planning to go into fields such as corrections, probation, and parole; for persons already employed in these fields; and for students preparing for graduate study. Collaborating agencies include the California Institution for Women and the Riverside County Probation Department.

Financial aid may be available for those students who meet the requirements of the Law Enforcement Education Program (LEEP). Applications for such aid must be presented to the Student Aid and Finance Office at the beginning of the school year after the student has worked out his program of studies with the LEEP adviser.

A student majoring in administration of justice completes either of the following programs:

Program A consists of the general requirements for the Bachelor of Arts degree (see *General Requirements*) and 48 units of coursework in the behavioral sciences, including ADJS 377, 378, 379, 435 (three quarters); ANTH 104 or 315; PSYC 104 or 105, 344, 475; SOCI 104, 375, 376. Cognate requirements are MATH 251, 252; PSYC 304, 356 are recommended.

Program B consists of the general requirements for the Bachelor of Science degree (see *General Requirements*) and 80 units of coursework in the behavioral sciences selected in consultation with the program adviser, including ADJS 377, 378, 379, 435 (three quarters); ANTH 104 or 315; PSYC 104 or 105, 304, 344, 356, 475; SOCI 104, 307, 375, 376.

### Anthropology

A student majoring in anthropology completes either of the following programs:

Program A consists of the general requirements for the Bachelor of Arts degree (see *General Requirements*) and 48 units of coursework in anthropology, including ANTH 104 or 315, 304, 306, 316, 494. Cognate requirements are SOCI 104, 404; PSYC 104 or 105; MATH 251, 252, or equivalent.

Program B consists of the general requirements for the Bachelor of Science degree (see *General Requirements*) and 60 units of coursework in anthropology, including ANTH 104 or 315, 304, 306, 316, 494. Cognate requirements are SOCI 104, 404; PSYC 104 or 105; MATH 251, 252, or equivalent. A bioanthropology emphasis includes BIOL 101, 102, 103; and 8 units from BIOL 111, 112, 185, 427, 444.

### Behavioral science

A student majoring in behavioral science completes either of the following programs:

Program A consists of the general requirements for the Bachelor of Arts degree (see *General Requirements*) and 56 units (32 upper division) of coursework, including ANTH 104, 304 or 306; PSYC 104 or 105, 224 or 324, 344; SOCI 104, 304 or 306, electives in the areas of the behavioral sciences selected in consultation with the program adviser. Cognate requirements are MATH 251, 252.



Program B consists of the general requirements for the Bachelor of Science degree (see *General Requirements*) and 64 units (40 upper division) of coursework, including ANTH 104, 304 or 306; PSYC 104 or 105, 224 or 324, 344; SOCI 104, 304, 306 or 414; electives in two of the areas of the behavioral sciences selected in consultation with the program adviser.

Behavioral science  
and religion

A student majoring in behavioral science and religion completes the general requirements for the Bachelor of Science degree (see *General Requirements*) and 120 units of coursework in the behavioral sciences and religion, including ANTH 104; PSYC 104, 205, 224, 225, 307, 344, 414, 475; RELB 104, 206, 207, 244, 404, 424; RELP 264; RELT 205, 245, 254, 354; SOCI 104, 275, 304, 307, 376, 414, 417, 488, 489; SOSR 104. Cognate requirements are BIOL 131, 132; EDFO 307 in the School of Education.

Counseling and  
education

A student majoring in psychology who is interested in credentials in elementary or secondary education, school psychometry, pupil personnel work, or counseling and guidance should consult his department chairman and the credentials adviser in the School of Education during his freshman or sophomore year for detailed information concerning requirements.

Psychology

A student majoring in psychology completes either of the following programs:

Program A is recommended for students interested in applying for a graduate program in psychology, and consists of the general requirements for the Bachelor of Arts degree (see *General Requirements*) and 52 units (36 upper division) of coursework in psychology, including PSYC 104 or 105, 206, 224, 225, 304, 354, 404 or 452, 406, 444, 451, 478, 485, 488. Cognate requirements are ANTH 104; MATH 251, 252; SOCI 104.

Program B is recommended for students interested in seeking employment at the baccalaureate level, and consists of the general requirements for the Bachelor of Science degree (see *General Requirements*) and 56 units (40 upper division) of coursework in psychology, including PSYC 104 or 105, 206, 304, 324, 344, 406, 435, 478, 488, and psychology electives selected in consultation with a departmental adviser. Cognate requirements are ANTH 104; MATH 251, 252; SOCI 104.

Social work

The program in social work offers courses leading to the Bachelor of Social Work degree and prepares the student for beginning practice in such settings as the church, schools, hospitals, public welfare, probation and parole, youth and family service centers, and other agencies that offer direct service to client groups. Students have excellent opportunities for field experience in a wide range of cooperating agencies dealing with many kinds of social problems. The program emphasizes an understanding of the historical development of social services, an awareness of social issues and change, a sensitivity to human value, and the professional skills with which to provide appropriate service. The program's scope and depth build a foundation for study in social work at the graduate level.

A student who intends to major in social work applies to and completes the admissions procedures for the Department of Social Work during the spring quarter of the sophomore year. Each application is considered by the admissions



committee of the department, an interview is held with each applicant, and a letter of response is sent out to these students before the fall quarter of the junior year.

A student majoring in social work completes the general requirements for the Bachelor of Social Work degree (see *General Requirements*) and 62 units (40 upper division) of coursework, including SOSR 104, 214, 217, 218, 311, 312, 317, 318, 319, 417, 388, 488, 489, 494, 498. Cognate requirements: ANTH 104; MATH 251, 252; PSYC 104 or 105, 324; SOCI 104. Recommended courses: BUAD 325; PLSC 304; PSYC 304; SOCI 307, 376, 414.

#### Social work and religion

A student majoring in social work and religion completes the general requirements for the Bachelor of Science degree (see *General Requirements*) and 120 units of coursework in the behavioral sciences and religion, including ANTH 104; PSYC 104, 324; RELB 104, 206, 207, 244, 404, 424; RELP 264; RELT 205, 254, 354; SOCI 104; SOSR 104, 214, 217, 218, 311, 312, 317, 318, 319, 417, 488, 489, 493, 494, 498; 8 units from SOSR 317, 318, 319. Cognate requirements are BIOL 107; MATH 251, 252, or equivalent. Recommended courses are MATH 104; PSYC 304; SOCI 307, 414.

#### Sociology

A student majoring in sociology completes either of the following programs:

Program A consists of the general requirements for the Bachelor of Arts degree (see *General Requirements*) and 48 units of coursework in sociology, including SOCI 104, 304, 404, 414, 494. Cognate requirements are ANTH 104 or 315; MATH 251, 252, or equivalent; PSYC 104 or 105.

Program B consists of the general requirements for the Bachelor of Science degree (see *General Requirements*) and 60 units of coursework in sociology, including SOCI 104, 304, 404, 414, 494. Cognate requirements are ANTH 104 or 315; MATH 251, 252, or equivalent; PSYC 104 or 105.

### MINOR SEQUENCES

The following minors are available:

Anthropology, 28 units (16 upper division) in anthropology selected in consultation with the program adviser.

Behavioral science, 28 units (16 upper division) selected in consultation with the program adviser, including ANTH 104; PSYC 104; SOCI 104.

Psychology, 28 units (16 upper division), including PSYC 104 or 105, 205 or 224, 344.

Sociology, 28 units (16 upper division) in sociology selected in consultation with the program adviser.

Social work, 28 units (16 upper division) selected in consultation with the program adviser.

## ADMINISTRATION OF JUSTICE

Upper division	<b>ADJS 345 Group Counseling in the Prison Setting</b>	<b>4 units</b>
	Dynamics of group formation, behavior; techniques of group counseling in the correctional institution setting. Emphasis on role of leader within framework of both directive and non-directive techniques. Limited supervised experience as a group participant.	
	<b>ADJS 377 Crime and Law</b>	<b>4 units</b>
	Legal aspects of delinquent and criminal behavior.	
	<b>ADJS 378 Probation and Parole</b>	<b>4 units</b>
	Role of the probation officer in the social rehabilitation of juvenile and adult offenders. Theory of probation and parole in relation to actual case histories. Taught by a parole officer.	
	<b>ADJS 379 Correctional Institutions</b>	<b>4 units</b>
	Theory of corrections; various types of correctional institutions.	
	<b>ADJS 435 Field Instruction</b>	<b>1-4 units</b>
	Experience and instruction under a professional worker in a public or private correctional agency. Credit earned at the rate of 1 unit per four clock hours per week. May be repeated for additional credit to a total of 4 units.	
	Prerequisite or concurrent: ADJS 378 or 379; consent of both the instructor and the agency.	
	<b>ADJS 488 Seminar in Administration of Justice</b>	<b>1-4 units</b>
	Selected topics. May be repeated with new content for additional credit.	
	Prerequisite: Consent of the instructor.	
	<b>ADJS 499 Directed Study</b>	<b>1-4 units</b>

## ANTHROPOLOGY

Lower division	<b>ANTH 104 Introduction to Anthropology</b>	<b>4 units</b>
	The nature of culture, with special reference to such features as technology, economic activities, community organization, kinship and marriage, social control, magic and religion, the arts, and other forms of cultural behavior. Wide array of examples from societies around the world.	
	<b>ANTH 275 Missions Orientation</b>	<b>2 units</b>
	Interdisciplinary approach to provide basic insights for those planning to live overseas. Orientation in cultural, linguistic, health, and religious aspects of life in selected overseas areas. Two class hours and one laboratory hour per week. Does not apply toward a major in anthropology.	
Upper division	Unless it is otherwise indicated, ANTH 104 or consent of the instructor is prerequisite to all upper division courses.	
	<b>ANTH 304 Biological Anthropology</b>	<b>4 units</b>
	Processes influencing human variation, past and present; distribution of human types; medical aspects of anthropology.	
	<b>ANTH 305 The Anthropology of Race</b>	<b>4 units</b>
	Social and biological bases of race. Historical and biological role of race and racism as a catalyst for social change in modern and primitive societies.	
	<b>ANTH 306 Language and Culture</b>	<b>4 units</b>
	Relation of linguistic phenomena to habitual thought and behavior.	
	<b>ANTH 307 Popular Culture</b>	<b>4 units</b>
	Dynamics and structure of modern complex societies, with emphasis on the United States. Mass communication as a catalyst for culture change.	

- ANTH 308 Geography of Man** **5 units**  
Survey of the physical and cultural elements of landscape and their areal associations; interpretation and differentiation; distributions of cultural traits. Four class periods, one four-hour laboratory per week.
- ANTH 309 Cultural Ecology** **4 units**  
Relationship between culture and the natural environment. Comparative cultural values and the econiche of man.
- ANTH 315 Cultural Anthropology** **4 units**  
Advanced course in ethnology and social organization.
- ANTH 316 Archaeology** **4 units**  
Survey of research in the reconstruction of early culture sequences and the rise of ancient civilizations; dating techniques in archaeology; principles of biblical chronology and genealogy; theories of long-term culture change; the role of invention and diffusion in the growth of early civilizations.
- ANTH 334 Peoples of Latin America** **4 units**  
Historical and comparative study. Aboriginal and contemporary culture patterns; problems of culture change; current social movements.
- ANTH 335 Peoples of Africa** **4 units**  
Prehistory and early kingdoms; cultural diversity; European contact and the slave trade; modern social movements; emerging nationalism.
- ANTH 336 Peoples of the Middle East** **4 units**  
Major societies and culture types of the eastern Mediterranean and North Africa.
- ANTH 337 Peoples of Asia** **4 units**  
Principal societies and religions and peasant cultures of South and East Asia.
- ANTH 338 Indians of North America** **4 units**  
Historical and comparative study of the native populations of North America; aboriginal and contemporary culture patterns. Acculturation problems.
- ANTH 348 Introduction to Medical Anthropology** **2 units**  
A survey of cultural beliefs and practices relating to health and health care systems. Especially for undergraduate students in the allied health professions.
- ANTH 425 Sociocultural Change** **4 units**  
Theories of cultural evolution, diffusion, acculturation, innovation.
- ANTH 434 Anthropology of Mission** **2 units**  
A study of mission, applying the findings of anthropology as they relate to cultural change. The processes of religious development, the means of diffusion, the factors affecting religious acculturation, and analysis from case studies of programs planned to direct changes in religion.  
Prerequisite: ANTH 104 or equivalent. Identical to RELM 434.
- ANTH 444 Comparative Religion** **4 units**  
Beliefs and practices directed toward manipulation or control of supernatural forces; animatism, animism, magic, witchcraft, ritual, concepts of the afterlife, shamanism; the role of religion as an integrative factor of culture. Identical to RELM 444.
- ANTH 445 Culture and Personality** **4 units**  
Psychological approach: national character; societal influences on childrearing; modal personality; culture and mental illness.
- ANTH 446 Folklore** **4 units**  
Oral and written tradition as an index to cultural systems; various genres such as folktale, riddle, and proverb; folk medicine, origin myths, and legends.



	ANTH 447 Applied Anthropology	4 units
	Analysis of directed culture-change programs, with case studies from missions, public health, education, inner city, and other contexts.	
	ANTH 448 Medical Anthropology	4 units
	Sickness and health as universal factors in the human condition. World view as an explanatory system for behavior; ethnographic examples of curing systems and coping mechanisms; cross-cultural communication of health principles and practices.	
	ANTH 465 Field Course: Archaeology, Ethnography	4-8 units
	Participation in an archaeological or ethnographic project under the supervision of a faculty member. May be repeated for additional credit.	
	ANTH 488 Proseminar	2 units
	ANTH 489 Religion and the Behavioral Scientist	4 units
	Does not apply toward a major or minor. Identical to SOSR 489 and SOCI 489.	
	ANTH 494 Methods of Field Research	4 units
	Field research design; analysis of approaches used by field workers in gathering and evaluating data; writing the research paper.	
	ANTH 498 Laboratory Projects	1-6 units
	ANTH 499 Directed Study	1-6 units
	Limited to students with senior standing and majoring in anthropology.	
	LING 305 Introduction to Linguistics	4 units
	RELB 445 Biblical Archaeology	2-4 units
Graduate	ANTH 534 Anthropology of Mission	3 units
	Identical to RELM 534.	
	ANTH 604 Seminar: Cultural Anthropology	4 units
	ANTH 605 Seminar: Middle Eastern Cultural History	4 units
	ANTH 614 Seminar: Physical Anthropology	4 units
	ANTH 615 Seminar: The Middle East in the Twentieth Century	4 units
	ANTH 616 Seminar: Prehistory	4 units
	ANTH 625 Seminar: Sociocultural Change	4 units
	ANTH 626 Seminar: Anthropological Linguistics	4 units
	ANTH 634 Seminar: Social Theory	4 units
	ANTH 644 Seminar: Comparative Religion	4 units
	ANTH 648 Seminar: Medical Anthropology	4 units
	ANTH 665 Fieldwork in Ethnography	arranged
	ANTH 667 Fieldwork in Archaeology	arranged
	ANTH 694 Directed Reading in Anthropology	arranged
	ANTH 697 Research	5 units
	ANTH 698 Thesis	5 units

## MARRIAGE AND FAMILY COUNSELING

	MFAM 464	Relationship Enrichment	2 units
Graduate	MFAM 504	Research Tools and Methodology in MFAM Counselors	4 units
	MFAM 514	Family Law and Ethics	2 units
	MFAM 515	Crisis Intervention Counseling	4 units
	MFAM 524	Field Experience	0 units
	MFAM 525	Counseling and Christian Theology	2 units
	MFAM 534	Clinical Internship	0 units
	MFAM 535	Case Presentation Seminar	2 units
	MFAM 544	Advanced Clinical Internship	0 units
	MFAM 551	Marriage Counseling Theory and Practice I	4 units
	MFAM 552	Marriage Counseling Theory and Practice II	4 units
	MFAM 554	Conjoint Family Therapy	4 units
	MFAM 556	Diagnostic Procedures in Clinical Pathology	4 units
	MFAM 561	Program Development in Relationship Enrichment	2 units
	MFAM 562	Practicum in Relationship Enrichment	2 units
	MFAM 565	Dissolution Counseling	2 units
	MFAM 567	Human Sexual Behavior	4 units
	MFAM 574	Assertive Training for MFAM Counselors	2 units
	MFAM 577	Family Life Workshop	2 units
	MFAM 604	Premarital Counseling	2 units
	MFAM 654	Treating the Troubled Child	2 units
	MFAM 655	Counseling the Adolescent	2 units
	MFAM 657	Setting up a Private Practice in MFAM	2 units
	MFAM 665	Seminar: Marriage Enrichment	2 units
	MFAM 674	Professional Seminar	2 units
	MFAM 675	Clinical Problems in Marriage and Family Counseling	2 units
	MFAM 694	Directed Study: Marriage and Family	1-4 units
	MFAM 695	Research Problems: Marriage and Family	2-6 units
	PSYC 555	Group Process Theory and Procedures	3 units
	RELP 464	Marriage, Religion, and the Family	2 units
	RELP 544	Theology, Encounter, and the Family	2 units

SOCI 514	Sociology of the Family	4 units
SOCI 614	Seminar: The Family	4 units

## MIDDLE EASTERN STUDIES

Upper division	MEST 351, 352	Introductory Arabic	8 units
	MEST 425	Peoples of the Middle East	4 units
	MEST 445	Religions of the Middle East and the Western World	4 units
Graduate	MEST 505	Social Research Methods and Methodology	4 units
	MEST 526	The Legacy of Hellenism	2 units
	MEST 527	Muhammad and His Times	2 units
	MEST 605	Seminar: Middle Eastern Cultural History	4 units
	MEST 615	Seminar: The Middle East in the Twentieth Century	4 units
	MEST 694	Directed Reading	arranged
	MEST 697	Research	5 units
	MEST 698	Thesis	5 units

## PSYCHOLOGY

PSYC 104 or 105 is prerequisite to all other courses in psychology except PSYC 005.

Remedial	PSYC 005	Personal Motivation and Study Skills	4 units
	Pregeneral studies course emphasizing the motivation to study and applied techniques of study skills. Does not apply toward a major or minor in psychology or behavioral science or toward the general requirement in personal/social relationships.		
Lower division	PSYC 104	General Psychology I	4 units
	A survey of the scientific study of human behavior, its causes and consequences. A general introduction to the nature and scope of psychology, including an analysis of the development, adjustment, and maladjustment of thinking, perception, motivation, learning, intelligence, and personality. Not open to students who take PSYC 105.		
	PSYC 105	Introduction to Psychology	4 units
	Scientific study of human behavior; motivation, conflict, emotions, learning, intelligence, and personality. Recommended for psychology, sociology, and behavioral science majors for the Bachelor of Arts. Not open to students who take PSYC 104.		
	PSYC 205	Personal and Social Adjustment	4 units
	Practical use of psychological principles in dealing with problems and circumstances related to personality development and social adjustment. Three lectures and a two and one-half hour participation in human dynamics laboratory per week. Does not apply toward a major in psychology.		
	PSYC 206	General Psychology II	4 units
	Selected areas of psychology studied in depth. Special emphasis on the scientific methods of studying physiological factors, adaptive behavior, perception, cognition, and motivation.		
	PSYC 224	Developmental Psychology I	3-4 units
	A survey of theory and current literature on the development of the individual, emphasizing the physical, mental, emotional, social, and religious/moral development which occurs within the family context from conception through the first twelve years of life. Observations and/or laboratory experience. Not open to persons who have taken PSYC 324.		



**PSYC 225 Developmental Psychology II** 3-4 units

A survey of theory and current literature on the development of the individual, emphasizing the physical, mental, emotional, social, and religious/moral development which occurs within the family and social context from adolescence through adulthood, old age, and death. Observations and/or laboratory experience. Not open to persons who have taken PSYC 324.

Prerequisite: PSYC 224 or consent of the instructor.

**PSYC 299 Directed Study** 1-4 units

Limited to department majors who wish to pursue independent investigations in psychology under the direction of a department faculty member. Approximately 40 clock hours of work per quarter per unit credit.

Upper division

**PSYC 304 Social Psychology** 4 units

Behavior of the individual as a member of the group and behavior patterns within groups. Social interaction, group organization and leadership; social influences on perception, cognitive processes, attitude formation and change. Identical to SOCI 304.

**PSYC 305 Psychological Aspects of Stress** 2-4 units

Factors leading to and results of psychological stress and anxiety. Ways to handle such life situations with emphasis on inner and divine strengths and other resources.

**PSYC 307 Educational Psychology** 4 units

Fundamental psychological problems encountered in education. Measurement and significance of individual differences; learning; motivation; transfer of learning; and educational implications of theories of intelligence. Does not apply toward a major in psychology.

**PSYC 324 Psychology of Human Growth and Development** 2 or 4 units

A life-span course surveying the theory and current literature on the development of the individual, emphasizing the physical, mental, emotional, social, and religious/moral development which occurs within the family and social context from conception through adulthood, aging, and death. Laboratory may be included. Not open to psychology majors or students who take PSYC 224, 225.

**PSYC 334 Field Observation** 1 unit

Supervised observations in schools, dormitories, and other related social agencies, allowing the student to integrate theoretically and applied psychology experientially. Approximately 30 clock hours per quarter per unit of credit plus case discussions with the student's supervisor. May be repeated for additional credit to a maximum of 3 units.

**PSYC 344 Introduction to Personality** 4 units

Development, dynamics, and assessment of the healthy personality by the use of various theoretical points of view and latest research findings to give a broad conceptual base for understanding the physiological, behavioral, and sociocultural role of perception, learning, and motivation in personality.

**PSYC 354 Experimental Psychology** 4 units

The nature and concepts of scientific method within the experimental laboratory. The rationale of scientific research, the role of the experiment in psychology, and a survey of research methods. Includes lecture and laboratory experience with human and/or animal subjects plus the design, execution, and write-up of an individual experimental project.

Prerequisite: PSYC 206, 406; MATH 251, 252; junior standing.

**PSYC 355 Psychology of Small Groups** 4 units

Factors influencing small-group productivity and morale. The influence of the group on the individual. Lecture, discussion, and small group exercises.

**PSYC 356 Psychological Tests and Measurements** 4 units

Purposes and use of psychological testing procedures in evaluation and diagnosis of human behavior. Limited supervised experience in techniques of administration and scoring of tests and the preparation and presentation of data in professional written reports.

Prerequisite: MATH 251 or consent of the instructor.

**PSYC 404 Experimental Social Psychology 4 units**

Survey of literature in experimental social psychology, with an emphasis on research in attitude change, sampling techniques, survey methods, attribution, and conformity. Includes lecture, laboratory and/or naturalistic research with humans plus the design, execution, and write-up of an individual social psychology research project.

Prerequisite: PSYC 206, 304, 354, 406; MATH 251, 252.

**PSYC 405 Psychology of Human Relations 4 units**

Topics include the effective use of human resources; group management and leadership skills; interviewing, counseling, and conference techniques. Skills emphasized include expression, listening, participation, self-awareness, and group dynamics. Identical to BUAD 414.

**PSYC 406 Methods of Research 4 units**

An introduction to the methodology used in designing and analyzing psychological experiments integrating theoretical and practical hypothesis testing with the use of appropriate parametric and nonparametric statistics. Laboratory practice in the formulation of testable hypotheses, solution of sampling problems, and the interpretation of results.

Prerequisite: PSYC 206; MATH 251, 252; junior standing.

**PSYC 414 Interviewing and Counseling 4 units**

Procedures, methods, and problems in the collection of personal data in a professional interview situation. Theories and techniques of academic, vocational, and therapeutic counseling in various settings designed to improve intra- and interpersonal behavioral patterns for more effective living. Consideration will be given to clinical, educational, and crisis-intervention counseling applications.

Prerequisite: PSYC 344 or consent of the instructor.

**PSYC 417 Psychology and Religious Issues 4 units**

The relationship of psychology and religion, with an emphasis on contemporary psycho-religious and ethical issues.

**PSYC 425 Psychology of Physical Disability 3 units**

Psychological reactions to organic illness. Methods of dealing with these reactions considered with reference to clinical situations. Identical to AHCJ 421 (School of Allied Health Professions).

**PSYC 434 Field Instruction 1 unit**

Approximately 30 hours of work per quarter plus supervision conferences. May be repeated for additional credit to a maximum of 3 units.

**PSYC 435 Introduction to Learning and Motivation 4 units**

Review and analysis of major phenomena and theories of human and animal learning. Introduction to the fields of problem-solving, thinking, and reasoning behavior.

Prerequisite: PSYC 206.

**PSYC 437 Principles of Human Behavior 4 units**

Current theories and principles in psychology related to learning and teaching, personality development and change, and interpersonal process and dynamics.

**PSYC 444 Theories of Personality 4 units**

A survey of historic and current theories of personality, its normal and abnormal formation and rehabilitation. Fundamental principles of mental health in school, home, and society. Problems of measurement, experimentation, and theory construction related to personality.

Prerequisite: PSYC 344 is strongly recommended.

**PSYC 451 Physiological Psychology I 4 units**

An introduction to the study of the biological substrates of behavior. Emphasis placed on the structure and function of the sensory and effector mechanisms, the nervous system, and the endocrine system as they are involved in behavior. Laboratory investigation of the structural and functional organization of the brain and nervous system.

Prerequisite: BIOL 131 or consent of the instructor.



**PSYC 452 Physiological Psychology II****4 units**

The design and execution of experiments investigating the relationships among brain and body chemistry, brain function, and behavior. Includes lecture, laboratory, and the preparation and write-up of an individual research project with animals or humans.

Prerequisite: PSYC 304, 354, 406; MATH 251, 252.

**PSYC 454 Advanced Counseling****4 units**

Refinement of counseling skills through intensive supervised training in individual counseling as encountered in the clinical setting. Emphasis is on integration of diagnostic interviewing and testing techniques to enhance problem identification and analysis, professional methods of long- and short-term intervention and change, evaluation of change, and the professional ethics of helping the client improve his functioning within his physical, social, and emotional environment. Simulated practice and/or laboratory assignments in agency settings.

Prerequisite: PSYC 356, 414, 444; senior standing.

**PSYC 455 Group Therapy****4 units**

Principles and techniques; role of the leader, problems of member selection, and evaluation of progress. Limited supervised experience as a group participant. Laboratory.

Prerequisite: Consent of the instructor.

**PSYC 464 The Exceptional Child****3 units**

Determinants, characteristics, problems, and adjustments of children who deviate markedly from the norm in mental, physical, emotional, and social aptitudes, traits, and tendencies. Educational methods for deviant children.

**PSYC 465 The Gifted Child****3 units**

Developmental study of the peculiar qualities that make up intellectual giftedness, special capacities, and special aptitudes. Psychological, philosophical, social, educational, and personal issues. Identical to EDCE 465 in the School of Education.

**PSYC 466 Mental Deficiency****3 units**

Etiology of mental retardation; diagnosis, characteristics, and classification of mental defectives. Degrees of impairment and resultant personality, school, family, and institutional problems.

**PSYC 474 Industrial and Personnel Psychology****4 units**

Introduction to the applications of psychology in industry and business. Topics include psychological solutions to personnel problems, including human relations; effective employee selection, training, motivation, and morale. Discussion of employer-employee relations, including factors influencing efficiency of work and job satisfaction.

**PSYC 475 Abnormal Psychology****4 units**

Introduction to the etiology, dynamics, and prevention of abnormal behavior, including neuroses, psychoses, character disorders, psychosomatic reactions, and other abnormal personality patterns. Emphasis is on the biological, social, cultural, and developmental antecedents of symptom complexes and the principles of learning, perception, and motivation as related to psychopathology.

Prerequisite: PSYC 344 or consent of the instructor.

**PSYC 477 Psycholinguistics****4 units**

A survey of current literature and research in the psychosocial and cultural influences in the acquisition of language in children and later speech recognition, production, and comprehension. The effects of language on the development of the individual, the development of society, and the development of relations between societies.

**PSYC 478 History and Systems of Psychology****4 units**

An historical and systematic analysis of psychological thought beginning with early Greek and medieval influences, progressing through later European developments, and focusing on their influence on modern psychological systems. Includes an overview of current trends with reference to earlier thinking.



- PSYC 485 Theories of Learning** **4 units**  
 A critical and systematic survey of the major learning theories in the light of experimental evidence, including Hull, Skinner, Tolman, and Spence, with emphasis on modern behavioral concepts.  
 Prerequisite: PSYC 206; PSYC 435 strongly recommended.
- PSYC 486 Thanatology** **4 units**  
 Psychological and social implications of death and dying as experienced by the terminally ill patient and significant others. Introduction to investigative techniques in homicide and suicide; analysis of equivocal deaths; the psychological autopsy.  
 Prerequisite: Consent of the instructor.
- PSYC 487 Seminar in Human Behavior** **1-4 units**  
 Variable content to meet special needs of students not majoring in psychology. Topics include applied human relations.  
 Prerequisite: Consent of the instructor.
- PSYC 488 Seminar in Psychology** **1-4 units**  
 Variable content to meet special needs of students majoring in psychology.  
 Prerequisite: Consent of the instructor.
- PSYC 489 Religion and the Behavioral Scientist** **4 units**  
 Does not apply toward a major or minor.
- PSYC 499 Directed Study** **1-4 units**  
 Limited to departmental majors with senior standing who wish to pursue independent investigations in psychology under the direct supervision of a department faculty member. Approximately 40 clock hours of work per quarter per unit of credit.
- Graduate **PSYC 505 Psychology of Interpersonal Relationships** **3 units**  
 Motivations of behavior, with applications to interactions between individuals and to functioning of groups.  
 Arranged.
- PSYC 521, 522 Understanding and Counseling the Adolescent** **3, 3 units**  
 Physiological, emotional, and social development. Representative theoretical viewpoints and research. Principles and techniques of counseling.  
 Prerequisite: Consent of the instructor.
- PSYC 544 Principles of Human Behavior** **3 units**  
 Current theories and principles in psychology related to learning and teaching, personality development and change, and interpersonal process and dynamics.
- PSYC 554 Counseling Theories and Techniques** **4 units**  
 Interviewing; social casework; parent counseling; case study methods. Directive, nondirective, and other methods.  
 Prerequisite: PSYC 414, 454.
- PSYC 555 Group Process Theory and Procedures** **4 units**  
 Group guidance; theories of group-individual interaction; communication processes; development and structure of organized groups.  
 Prerequisite: PSYC 414, 455.
- PSYC 556 Advanced Techniques in Psychological Assessment and Diagnosis** **2-4 units**  
 The application of psychological testing methods in the diagnostic assessment of individual and group behavioral dynamics as encountered in marriage, family, and child counseling; social services; psychotherapy. Observations and/or laboratory experience.  
 Prerequisite: PSYC 356, 414, 454.

## SOCIAL WORK

- Lower division**
- SOSR 104 Introduction to Social Work** 4 units  
A survey of the historical development of the social welfare system as a response to social problems and needs; current fields of practice in social work. Principles, methods, values, and philosophy of social work. Social problems of selected target groups analyzed. Weekly field observation laboratory at local agency. Prerequisite to all other SOSR courses.
- SOSR 214 Social Institutions and Social Policy** 4 units  
Analysis of historical development of the social welfare system within the context of the economic, political, and social climate of the period; implications for social welfare policy and social issues. The relationship of changing economic and social values and systems to social work policy development.  
Prerequisite: Consent of the instructor.
- SOSR 217 Social Work Theory and Practice I** 4 units  
Theory and principles of social work with individuals and families. Basic interviewing methods; problem identification and analysis. Professional values, purpose, and ethics underlying social casework practice. Simulated practice activities and weekly laboratory.  
Prerequisite: Consent of the instructor.
- SOSR 218 Social Work Theory and Practice II** 4 units  
Refinement of interviewing skills and problem-solving processes. Emphasis on brief intervention techniques applicable to generic social work modalities; implications for use with a variety of ethnic, racial, and cultural groups.  
Prerequisite: SOSR 217.
- Upper division**
- Admission to the social work program requires the successful completion of SOSR 104, 214, and 217; a written application; other admissions procedures; and a personal interview. Lower division courses and permission of the instructor are prerequisites for upper division coursework.
- SOSR 311 Human Behavior and Social Environment I** 4 units  
Physical, psychological, social, cultural, and spiritual foundations of personality development; their interrelationship for normal and abnormal behavior from infancy through adolescence. Implications for the social worker and the social functioning of the individual in his physical, emotional, and social environment. Social systems approach in the study of behavior disorders.  
Prerequisite: PSYC 324.
- SOSR 312 Human Behavior and Social Environment II** 4 units  
Biopsychosocial approach to the study of behavior disorders from young adulthood to senescence, including sociocultural differences in dynamics and treatment methods for various ethnic groups. Theoretical framework from other related disciplines compared with social work concepts and treatment methods.  
Prerequisite: PSYC 324, SOSR 311.
- SOSR 317 Social Work Methods: Casework** 4 units  
Analysis of human behavior and social systems theories as related to the practice of social casework. Application of several models and methods of social work intervention explored in depth. Basic diagnostic and problem-solving skills needed in helping individuals and families achieve their potential in psychosocial functioning. Laboratory assignments.  
Prerequisite: SOSR 217; PSYC 324.
- SOSR 318 Social Work Methods: Group Work** 4 units  
Survey and evaluation of historical background, theory, and group work methods employed by social workers. Application of concepts and principles of group dynamics and diagnostic methods in prevention and rehabilitation.  
Prerequisite: SOSR 217, 317.



- SOSR 319 Social Work Methods: Community Organization** **4 units**  
 Survey and evaluation of historical and theoretical developments in community organization. Role of the social worker in identification, analysis, and evaluation of and intervention in community problems. Understanding of social policy, social change, and the community as a social system. Laboratory assignments.  
 Prerequisite: Consent of the instructor.
- SOSR 324 Child Welfare** **4 units**  
 Survey of historical development of services for children. Emphasis on social policy and services affecting children in juvenile courts, foster care, day care centers, adoptions, protective services, institutional care, and special needs services. Exploration of funding patterns, laws, and new resources for children's services. Offered on even-numbered years.  
 Prerequisite: SOSR 217 or consent of the instructor.
- SOSR 325 Services for the Disturbed Child** **4 units**  
 Effect of the environment on the child, and of the child on the home and school. Methods of dealing with the emotionally and physically disabled child and his family; rehabilitation.  
 Prerequisite: SOSR 324 and consent of the instructor.
- SOSR 326 Medical Social Services** **4 units**  
 Survey and analysis of historical background of medical social work; professional methods of intervention. Medical terminology and discussion of psychosocial effects of major illnesses on the individual families, and other groups. Micro-level health care delivery systems. Offered on odd-numbered years.  
 Prerequisite: SOSR 217 and consent of the instructor.
- SOSR 335 Social Work with Families** **4 units**  
 Social work approaches to problem-solving with families. Emphasis on strengthening of interpersonal, social, and spiritual components of family life. Simulated family situations with use of video tape for analysis of role playing. Offered on even-numbered years.  
 Prerequisite: SOSR 217 and consent of instructor.
- SOSR 336 Social Work with the Aged** **4 units**  
 Exploration and assessment of the nature, scope, and presumed causes of problems for the aged. Aspects of adjustment to the aging process. Modes of working with the aged individual in group and community settings. Analysis of microsystems and macrosystems of service delivery. Offered on odd-numbered years.  
 Prerequisite: SOSR 217 and consent of instructor.
- SOSR 417 Advanced Social Work Practice** **4 units**  
 Advanced methods of interviewing and counseling employed by the social worker. Application of contemporary social work techniques used with special target groups. Emphasis on the family; rehabilitative and ethnic factors of counseling in community mental health centers.  
 Prerequisite: SOSR 217, 311, 312, 317, 318.
- SOSR 488 Field Seminar** **2, 2, 2 units**  
 Role of the professional social work practitioner; responsibility to the client, the agency, and the profession. Concepts of sanctions, authority, power, and ethical codes. Required each quarter of the senior year. Concurrent registration in SOSR 498 required.  
 Prerequisite: SOSR 217, 317, 318, 417; senior standing and consent of field coordinator.
- SOSR 489 Religion and the Behavioral Scientist** **4 units**  
 Does not apply toward a major or minor. Identical to SOCI 489, ANTH 489, and PSYC 489.
- SOSR 494 Methods of Research** **4 units**  
 Research project related to social work practice, including administration of justice, health, family and children, drugs and alcoholism. Identical to SOCI 494.  
 Prerequisite: MATH 251, 252.
- SOSR 498 Field Practicum** **4, 4, 4 units**  
 Externship program involving the application of social work methods to social work problems in service agencies. Required each quarter of the senior year.  
 Prerequisite: SOSR 217, 317, 318, 417, completion of major admissions procedures, senior standing and consent of field coordinator.
- SOSR 499 Directed Study** **1-4 units**



## SOCIOLOGY

Lower division	<b>soci 104 Introduction to Sociology</b> <b>4 units</b>
	The science of society: social norms, social processes, social change, and social structure.
	<b>soci 275 Sociology of Love and Marriage</b> <b>4 units</b>
	Love, maturity, compatibility, conflict, religious factors, and specific areas of adjustment in marriage.
Upper division	Unless it is otherwise indicated, SOCI 104 or consent of the instructor is prerequisite to all upper division courses.
	<b>EDFO 307 Social Foundations of Education</b> <b>4 units</b>
	Relationships between schools and other social institutions, between schools and their communities, and within the subculture of the school. Emphasis in the first and third quarters on philosophic concerns and historical backgrounds; emphasis in the second quarter on sociological and anthropological considerations. Fieldwork required.
	<b>soci 304 Social Psychology</b> <b>4 units</b>
	Behavior of the individual as a member of the group, and behavior patterns within groups. Social interaction, group organization, and leadership; social influences on perception, cognitive processes, attitude formation and change. Identical to PSYC 304.
	<b>soci 306 Social Issues</b> <b>4 units</b>
	Current issues agitating society; underlying social factors. Resolution of issues evaluated in the light of social theory.
	<b>soci 307 Ethnic Relations</b> <b>4 units</b>
	Prejudice and discrimination in the interrelationships of society and its ethnic components.
	<b>soci 374 Social Disorganization</b> <b>4 units</b>
	Current theory and research in selected areas of disorganization such as crime, urban poverty, war, and deviant behavior.
	<b>soci 375 Criminology</b> <b>4 units</b>
	Crime as a social phenomenon. Psychological and sociocultural factors in the development of the criminal.
	<b>soci 376 Juvenile Delinquency</b> <b>4 units</b>
	Historical background; analysis of present forms of delinquency; evaluation of remedial measures now in common use.
	<b>soci 404 Foundations of Social Thought</b> <b>4 units</b>
	Historical background of behavioral sciences, particularly philosophy of the Enlightenment. Development of current social and anthropological theory.
	<b>soci 414 The Family</b> <b>4 units</b>
	Structure and function; changing patterns; future in urban society. Relationships between changes in society and widespread family problems.
	<b>soci 415 Urban Sociology</b> <b>4 units</b>
	The urban community: its history, social structure, and problems of interaction; processes of urbanization.
	<b>soci 416 Collective Behavior</b> <b>4 units</b>
	The crowd, the public, and the mass; social movements.
	<b>soci 417 Sociology of Religion</b> <b>4 units</b>
	Religion as a social institution; its relation to other social institutions; its organizational forms.
	<b>soci 455 Socialization</b> <b>4 units</b>
	Major theories of socialization throughout the life cycle, with emphasis on childhood and home. All life stages and pertinent agencies of socialization.

	SOCI 488	Proseminar	2 units
	SOCI 489	Religion and the Behavioral Scientist	4 units
	Does not apply toward a major or minor. Identical to ANTH 489, PSYC 489, and SOSR 489.		
	SOCI 494	Methods of Research	4 units
	Research design; sampling; application of research principles and writing.		
	Prerequisite: MATH 251, 252.		
	SOCI 499	Directed Study	1-4 units
	Limited to students with upper division standing and majoring in sociology.		
Graduate	SOCI 505	Social Research Methods and Methodology	2-4 units
	SOCI 514	Sociology of the Family	4 units
	SOCI 525	Population	4 units
	SOCI 604	Seminar: Social Psychology	4 units
	SOCI 605	Seminar: Middle Eastern Cultural History	4 units
	SOCI 607	Seminar: Ethnic Relations	4 units
	SOCI 614	Seminar: The Family	4 units
	SOCI 615	Seminar: The Middle East in the Twentieth Century	4 units
	SOCI 616	Seminar: Collective Behavior	4 units
	SOCI 618	Seminar: Population	4 units
	SOCI 624	Seminar: Sociology of Religion	4 units
	SOCI 625	Seminar: The Community	4 units
	SOCI 634	Seminar: Social Theory	4 units
	SOCI 674	Seminar: Medical Sociology	4 units
	SOCI 694	Directed Reading in Sociology	arranged
	SOCI 697	Research	arranged
	SOCI 698	Thesis	arranged

## DEPARTMENT OF BIOLOGY

Chairman	LEONARD R. BRAND, Associate Professor of Biology PH.D. Cornell University
Associate Chairman	C. DOUGLAS EDDLEMAN, Associate Professor of Biology PH.D. University of Texas at Austin
Faculty	LESTER E. HARRIS, JR., Professor of Biology M.S. University of Maryland
	ARIEL A. ROTH, Professor of Biology PH.D. University of Michigan
	ARTHUR V. CHADWICK, Associate Professor of Biology PH.D. University of Miami
	EARL W. LATHROP, Associate Professor of Biology PH.D. University of Kansas
	HAROLD R. MILLIKEN, Associate Professor of Biology M.A. University of Virginia
	NORMAN L. MITCHELL, Associate Professor of Biology PH.D. University of Western Ontario
	GARY L. BRADLEY, Assistant Professor of Biology M.A. Loma Linda University
	CONRAD D. CLAUSEN, Assistant Professor of Biology PH.D. Loma Linda University
	ANTHONY W. LEWIS, Assistant Professor of Biology PH.D. Arizona State University
	CAROLANN S. ROSARIO, Instructor in Biology B.A. Loma Linda University
Collaborating faculty	KENNETH A. ARENDT, Professor of Physiology and Biophysics, School of Medicine PH.D. Boston University
	IAN M. FRASER, Professor of Pharmacology, School of Medicine PH.D. University of Cambridge
	ROBERT L. NUTTER, Professor of Microbiology, School of Medicine PH.D. Iowa State University
	RAYMOND E. RYCKMAN, Professor of Microbiology, School of Medicine PH.D. University of California, Berkeley
	EDWARD D. WAGNER, Professor of Microbiology, School of Medicine PH.D. University of Southern California
	ELMER A. WIDMER, Professor of Environmental and Tropical Health, School of Health PH.D. Colorado State University
	CHARLES E. WINTER, Professor of Microbiology, School of Medicine PH.D. University of Maryland
	LEONARD R. BULLAS, Research Associate Professor of Microbiology, School of Medicine PH.D. Montana State University
	NORMAN M. CASE, Associate Professor of Anatomy, School of Medicine PH.D. Loma Linda University
	ARTHUR E. DALGLEISH, Associate Professor of Anatomy, School of Medicine PH.D. Stanford University
	YUK LIN HO, Associate Professor of Microbiology, School of Medicine PH.D. Harvard University
	ELWOOD S. MCCLUSKEY, Associate Professor of Physiology, School of Medicine PH.D. Stanford University
	ROBERT L. SCHULTZ, Associate Professor of Anatomy, School of Medicine PH.D. University of California, Los Angeles
Staff	DONNICE D. ROSS, Department Associate (on leave) B.A. Loma Linda University



## EARTH HISTORY

Faculty	IVAN G. HOLMES, Professor of Chemistry PH.D. Oregon State University
	ARIEL A. ROTH, Professor of Biology PH.D. University of Michigan
	LEONARD R. BRAND, Associate Professor of Biology PH.D. Cornell University
	ARTHUR V. CHADWICK, Associate Professor of Biology PH.D. University of Miami
	PAUL H. BUCHHEIM, Assistant Professor of Geology PH.D. University of Wyoming
	CONRAD D. CLAUSEN, Assistant Professor of Biology PH.D. Loma Linda University
	CLYDE L. WEBSTER, Assistant Professor of Chemistry PH.D. Colorado State University, Fort Collins

**Objectives** The objectives of the Department of Biology are to help the student better understand himself and the living things around him, to develop a scholarly approach to the study of scientific information, and to prepare for a career in biology.

**Graduate programs** Programs leading to the Master of Arts in biology, Master of Science in earth history, and Doctor of Philosophy degrees are described in the BULLETIN of the Graduate School.

## BACCALAUREATE MAJOR PROGRAMS

**Preparation for teaching** A student preparing to teach biology at the secondary level may complete, instead of one of the patterns listed above, BIOL 315, 364, 374, 406, 469, 485. In addition, he should plan to qualify for teaching credentials, and during his freshman or sophomore year should consult the credentials adviser in the School of Education for detailed information concerning requirements.

A program leading to the Master of Arts in the teaching of biology is described in the BULLETIN of the School of Education.

**Biology** A student majoring in biology completes either of the following programs:

Program A consists of the general requirements for the Bachelor of Arts degree (see *General Requirements*) and 41 units of coursework in biology, including BIOL 101, 102, 103, 404 or CHEM 481 and 482; BIOL 405 (3 quarters), 447, 464, and at least one upper division course in plant science. Cognate requirements in other departments are CHEM 111, 112, 113, 371, 372, 373; MATH 121 or 131. Recommended coursework includes PHYS 211, 8 units from PHYS 212-215, and one of the following patterns in biology (which will be identified on the official transcript):

Botany: BIOL 485, plus 16 units chosen from BIOL 414, 468, 474, 477, 478, 484, 485, or any field station course approved by the faculty.

Ecology and Field Biology: BIOL 414, 485, and one approved field station course, plus 8 units chosen from: BIOL 406, 409, 416, 424, 425, 449, 465, 467, 469, 475.

Zoology: BIOL 409, 466, and 469, plus 8 units chosen from: BIOL 434, 458, 465, 467, 470, 475, or any field station course approved by the faculty.

Program B consists of the general requirements for the Bachelor of Science degree and 56 units of coursework in biology, including BIOL 101, 102, 103, 404 or CHEM 481 and 482; BIOL 405 (3 quarters), 447, 464, and at least one upper division course in plant science. Cognate requirements in other departments are CHEM 111, 112, 113, 371, 372, 373; MATH 121 or 131; PHYS 211, 8 units from PHYS 212-215. A student may also choose one of the patterns listed above in Program A.

Biophysics  
Health science

A program in biophysics is offered through the Department of Physics.

A program in health science is offered through the Department of Physical Education.

Intensive  
food production  
Combined major

A program in intensive food production is offered through the Department of Agriculture.

If a combined major is desired, a Bachelor of Science degree is individually constructed, with coursework in biology and a related department, as determined by advisers from the two departments and approved by the Dean.

## RESEARCH CURRICULUM IN BIOLOGY

A research curriculum is open to qualified students who are interested in gaining experience in biological research. Inasmuch as the research curriculum requires a minimum of two years in the program, interested students should apply early, preferably at the beginning of the first quarter in the freshman year.

Requirements include BIOL 101, 102, 103, 188, 296; CHEM 111, 112, 113; BIOL 109 (the first quarter the student is in the program); additional courses the student selects with the advice of a committee of three faculty members of the department; one or more oral examinations over the principal field of interest.

The student will conduct research under the guidance of his adviser, beginning as early as his second quarter in the research curriculum.

## MINOR SEQUENCE

A minor in biology is 29 units of coursework including BIOL 101, 102, 103, 489; additional courses selected from those applicable toward a major.

## COURSES

- Lower division**
- BIOL 101, 102, 103 General Biology** 4, 4, 4 units  
Primarily for students majoring in science. Emphasis on current developments. Three class hours, one three-hour laboratory per week.  
Prerequisite: A course in chemistry at the secondary or college level.
- BIOL 107 Physiology of Man** 4 units  
Man as an integrated organism; systems of the body; the basis of healthful living. Not open to students majoring in biology. Four class hours per week.
- BIOL 109 Research Seminar** 1/2 unit per quarter  
Analysis of current research in biology. May be repeated for additional credit.  
Prerequisite: Research curriculum in biology.
- BIOL 111 Human Anatomy** 4 units  
Two class hours, two three-hour laboratories per week. Combines with BIOL 112 for students in preprofessional allied health programs. Does not apply toward a major in biology.
- BIOL 112 Human Physiology** 5 units  
Combines with BIOL 111 for students in preprofessional allied health programs. Four class hours, one three-hour laboratory per week. Does not apply toward a major in biology.
- BIOL 131, 132 Human Physiology and Anatomy** 4, 4 units  
Primarily for students in associate or baccalaureate degree programs in nursing. Three class hours, one three-hour laboratory per week. Does not apply toward a major in biology.
- BIOL 185 Basic Medical Microbiology** 4 units  
Applications to medical microbiology. Three class hours, one three-hour laboratory per week. For preprofessional students in nursing, dental hygiene, etc. Does not apply toward a major in biology.
- BIOL 188 Introduction to Research** 2 units  
Prerequisite: Enrollment in research curriculum or BIOL 101, 102; minimum grade point average of 2.5 overall and 3.0 in biology; consent of the instructor.
- BIOL 296 Undergraduate Research** 1-4 units  
Original investigation pursued under the direction of a staff member. May be repeated for additional credit.  
Prerequisite: BIOL 188.
- Upper division**
- BIOL 315 Biological Techniques** 3 units  
Common research methods and instruments. One class hour, two three-hour laboratories per week.  
Prerequisite: BIOL 101, 102, 103; CHEM 373; PHYS 213.
- BIOL 326 Natural History** 4 units  
Identification, distribution, and life habits of plants and animals of California. Does not apply toward a major in biology. Three class hours per week; Sunday field trips.
- BIOL 387 Plant Pathology** 4 units  
Cause, effect, and control of economically important diseases. Taxonomy and morphology of fungi. Enrollment limited to 15 students. Three class hours, one three-hour laboratory per week. Offered even-numbered years.  
Prerequisite: BIOL 101, 102, 103.
- BIOL 388 Introduction to Research** 2 units  
Prerequisite: Enrollment in research curriculum or BIOL 101, 102; minimum grade point average of 2.5 overall and 3.0 in biology; consent of the instructor.



- BIOL 404 Cellular and Molecular Biology** 4 units  
The living cell, its organoids, and their functions. Three class hours, one three-hour laboratory per week.  
Prerequisite: BIOL 101, 102, 103; CHEM 371.
- BIOL 405 Undergraduate Seminar** 1/2 unit per quarter  
Recent developments in selected areas of biology. May be repeated for additional credit.
- BIOL 406 Introduction to Marine Biology** 4 units  
Marine organisms, their adaptations and ecological relationships. Impact of man on the marine environment. Three class hours per week; laboratory or field trip on alternate weeks.  
Prerequisite: BIOL 101, 102, 103.
- BIOL 409 Invertebrate Biology** 4 units  
Behavior, physiology, ecology, morphology, and systematics of invertebrates. Emphasis on morphology and systematics. Three class hours, one three-hour laboratory per week.  
Prerequisite: BIOL 101, 102, 103; or equivalent.
- BIOL 414 General Ecology** 4 units  
Interrelations of plants and animals; ecological principles related to the composition of typical North American communities. Three class hours per week; one-day field trip alternate weeks, or the equivalent.  
Prerequisite: BIOL 101, 102, 103.
- BIOL 416 Tropical Plant Ecology** 4 units  
Emphasis on environmental factors, structure, and life forms of plants in rain, monsoon, and savanna forests. Lectures, laboratory, fieldwork in a tropical area.  
Prerequisite: BIOL 477 or coursework in one or more plant taxa.
- BIOL 424 Wilderness Ecology** 3 units  
Comparative study of biotic communities in a selected wilderness area. An intensive two-week field course.  
Prerequisite: BIOL 101, 102, 103; consent of the instructor.
- BIOL 425 Limnology** 4 units  
Physical, biological, and spiritual aspects of fresh water and their human implications. Four class hours per week; Sunday field trips.  
Prerequisite: BIOL 101, 102, 103.
- BIOL 427 Human Ecology** 2 units  
Human populations in relation to the environment.
- BIOL 434 Histology** 4 units  
Descriptive analysis of normal vertebrate tissue and organs.  
Prerequisite: BIOL 101, 102.
- BIOL 444 Human Genetics** 3 units  
Application of the principles of genetics to human biology. Loma Linda campus.
- BIOL 447 Genetics** 4 units  
Heredity and variation as demonstrated by higher and lower organisms.  
Prerequisite: BIOL 404.
- BIOL 449 Population Biology** 4 units  
Interactions within and between populations. Emphasis on factors producing spatial and temporal changes in populations. Four class hours per week. Offered odd-numbered years.  
Prerequisite: BIOL 101, 102, 103; recommended BIOL 447; MATH 131.
- BIOL 458 Vertebrate Biology** 4 units  
Systematics, behavior, ecology. Three class hours, one three-hour laboratory per week.  
Prerequisite: BIOL 101, 102, 103.

- BIOL 459 Histological Microtechniques** 2 units  
Applied laboratory production of permanent microscope slides.  
Prerequisite: BIOL 101, 102, 103.
- BIOL 464 Principles of Development** 4 units  
Gametogenesis, fertilization, morphogenesis, differentiation, and regeneration illustrated in the sea urchin, amphibian, chick, and human. Three class hours, one three-hour laboratory per week.  
Prerequisite: BIOL 447.
- BIOL 465 Ornithology** 4 units  
Birds of North America: field identification, distribution, life histories, behavior, and ecology. Field study.  
Prerequisite: BIOL 101, 102, 103.
- BIOL 466 Vertebrate Physiology** 4 units  
Mechanisms of animal function. Three class hours, one three-hour laboratory per week.  
Prerequisite: BIOL 101, 102, 103; consent of the instructor.
- BIOL 467 Herpetology** 4 units  
Identification, classification, distribution, and life habits of amphibians and reptiles. Three class hours per week; Sunday field trips.  
Prerequisite: BIOL 101, 102, 103.
- BIOL 468 Plant Anatomy** 4 units  
Microscopic anatomy of plant tissues, emphasizing origin and development. Three class hours, one three-hour laboratory per week.  
Prerequisite: BIOL 101, 102, 103.
- BIOL 469 Animal Behavior** 4 units  
Behavioral mechanisms of animals and their role in survival. Lectures and projects.  
Prerequisite: BIOL 101, 102, 103.
- BIOL 470 Protozoology** 4 units  
Morphology, taxonomy, and life history of free-living and parasitic protozoa. Three class hours, one three-hour laboratory per week.  
Prerequisite: BIOL 101, 102, 103.
- BIOL 474 Microbiology** 5 units  
Bacteria, yeasts, molds, protozoa, and related organisms contributing to decay, fermentation, disease, and the biological balance in nature. Four class hours, one three-hour laboratory per week.  
Prerequisite: BIOL 101, 102, 103.
- BIOL 475 General Entomology** 4 units  
Insect biology. Three class hours, one three-hour laboratory per week.
- BIOL 476 Biostatistics** 4 units  
Statistical analysis of biological systems, including computer applications. Three class hours, one laboratory per week. Offered even-numbered years.  
Prerequisite: MATH 121 or consent of the instructor.
- BIOL 477 Plant Morphology** 4 units  
Thallophytes, bryophytes, and tracheophytes; classification, structure, and life cycles. Three class hours, one three-hour laboratory per week.  
Prerequisite: BIOL 101, 102, 103.
- BIOL 478 Plant Physiology** 4 units  
Water relations, mineral nutrition, metabolism, photosynthesis, growth and flowering, and hormonal control. Three class hours, one three-hour laboratory per week. Offered odd-numbered years.  
Prerequisite: BIOL 101, 102, 103.
- BIOL 484 Mycology** 4 units  
Morphology and physiology of fungi. Three class hours, one three-hour laboratory per week.  
Prerequisite: BIOL 101, 102, 103.

- BIOL 485 Systematic Botany** **4 units**  
 Classification of flowering plants. Three class hours, one three-hour laboratory per week.  
 Prerequisite: BIOL 101, 102, 103.
- BIOL 486 Current Topics in Biology** **1-4 units**  
 Reviews of current interest in specific areas of biological science, offered at the discretion of the department. The student may repeat different sections of the course for additional credit.  
 Prerequisite: Consent of instructor.
- BIOL 487 Biology of the Galapagos Islands** **8 units**  
 Emphasizes the ecological pressures of the archipelago which bear upon the biosystematics of island flora and fauna. Specific forms are studied in detail with respect to their natural history and differentiation from island to island. Lectures supplemented with field observations on various islands. Includes guest lectures concerning current research and problems of conservation in the islands.  
 Prerequisite: Consent of instructor.
- BIOL 488 Paleobiology** **4 units**  
 Principles of paleontology and study of the various groups of fossil organisms. Three class hours per week; Sunday field trips.  
 Prerequisite: BIOL 101, 102, 103.
- BIOL 489 Philosophy of Science** **4 units**  
 The nature of scientific research and philosophies; evidence regarding the origins of living things. Does not apply toward a major.  
 Prerequisite: BIOL 101, 102, 103.
- BIOL 495 Undergraduate Research** **1-4 units**  
 Original investigation pursued under the direction of a staff member. May be repeated for additional credit.  
 Prerequisite: BIOL 188 or 388.
- BIOL 499 Directed Study** **1-4 units**  
 Experimental or library study of a problem of restricted scope. Limited to biology majors and to students with special preparation and a minimum overall grade point average of 2.5.  
 Prerequisite: Consent of the chairman.

**Graduate** Consult Graduate School BULLETIN for details.

<b>ANAT 544</b>	<b>Human Embryology</b>	<b>3 units</b>
<b>ANAT 549</b>	<b>Molecular Cytology and Topographical Chemistry</b>	<b>3 units</b>
<b>BIOL 515</b>	<b>Biogeography</b>	<b>4 units</b>
<b>BIOL 516</b>	<b>Readings in Biogeography</b>	<b>2 units</b>
<b>BIOL 518</b>	<b>Readings in Ecology</b>	<b>2 units</b>
<b>BIOL 519</b>	<b>Advanced General Ecology</b>	<b>4 units</b>
<b>BIOL 524</b>	<b>Advanced Invertebrate Biology</b>	<b>3 units</b>
<b>BIOL 536</b>	<b>Seminar in Animal Behavior</b>	<b>2 units</b>
<b>BIOL 538</b>	<b>Mammalogy</b>	<b>4 units</b>
<b>BIOL 544</b>	<b>Biosystematics and Speciation</b>	<b>5 units</b>
<b>BIOL 546</b>	<b>Advanced Studies in Genetics</b>	<b>2 units</b>
<b>BIOL 554</b>	<b>Philosophy of Creation</b>	<b>2 units</b>
<b>BIOL 555</b>	<b>Problems in Paleontology</b>	<b>4 units</b>



BIOL 556	Paleobotany	2 units
BIOL 558	History and Philosophy of Biology	3 units
BIOL 584	Physiology and Development of Plants	4 units
BIOL 585	Advanced Studies in Plant Hormones	2 units
BIOL 604	College Biology Teaching	3-4 units
BIOL 605	Seminar in Biology	1 unit
BIOL 606	Special Problems in _____	1-4 units
BIOL 615	Research Techniques in Biology	1 unit
BIOL 697	Research	arranged
BIOL 698	Thesis	arranged
BIOL 699	Dissertation	arranged
BIOM 581, 582, 583	Biophysical Systems Analysis	3, 3, 3 units
ENVH 565	Introduction to Air Hygiene and Resources	3 units
ENVH 568	Water and Waterborne Wastes	3 units
ENVH 569	Environmental Health Laboratory	4 units
MICR 534	Microbial Physiology	4 units
MICR 535	Molecular Biology of Microorganisms	4 units
MICR 554	Bacteriophage Genetics	3 units
MICR 555	Microbial Genetics	3 units
MICR 556	Microbial Genetics Laboratory	2 units
MICR 564	Bacterial Virology	3 units
MICR 565	Animal Virology	4 units
MICR 566	Cell Culture	3 units
MICR 574	Arthropod Vectors of Infectious Agents	5 units
MICR 575	Arthropod Vectors Laboratory	1-2 units
MICR 576	Field Medical Entomology	3 units
MICR 585	Helminthology	4 units
PHSL 535	Comparative Physiology	5 units
PHSL 541, 542	Cell and Molecular Biology	4, 4 units
PHSL 596	Readings in Comparative Physiology	1 unit
PHSL 597	Readings in Circadian Rhythms	1-2 units
STAT 521	Biostatistics I	4 units
STAT 522	Biostatistics II	4 units
STAT 568	Data Analysis	2 units

## EARTH HISTORY

Upper division	EHIS 421	Earth Structures I (Physical Geology)	4 units
	EHIS 422	Earth Structures II (Mineralogy and Petrology)	4 units
	EHIS 423	Earth Structures III (Geochemistry)	4 units
Graduate	EHIS 515	Research Techniques	1 unit
	EHIS 536	Seminar: Current Literature	1 unit
	EHIS 541	Earth History I (Paleobiology)	4 units
	EHIS 542	Earth History II (Sedimentology)	4 units
	EHIS 543	Earth History III (Paleontology Interpretation)	4 units
	EHIS 697	Research	9-10 units
	EHIS 698	Thesis	1-2 units



DEPARTMENT OF  
**BUSINESS AND ECONOMICS**

Chairman	ROBERT M. FORD, JR., Associate Professor of Business and Economics M.B.A. Andrews University
Faculty	RALPH L. KOORENNY, Professor of Economics and Management (on leave) PH.D. University of Colorado
	HAROLD R. PHILLIPS, Professor of Business and Economics PH.D. University of Florida
	WILFRED M. HILLOCK, Associate Professor of Business and Economics M.B.A. Indiana University
	ANTOINE JABBOUR, Associate Professor of Business and Economics PH.D. Catholic University of America
	WILLIAM J. KEY, Associate Professor of Business and Economics M.B.A. Washington State University
	LANNY R. STOUT, Assistant Professor of Business and Economics M.B.A. Golden Gate University Certified Public Accountant, California
Collaborating faculty	PETER G. STRUTZ, Associate Professor of Psychology PH.D. University of Alberta
Lecturers	CALVIN J. HANSON, Lecturer in Insurance B.S. Loma Linda University Certified Property and Casualty Underwriter
	CLIFFORD E. MULVIHILL, Lecturer in Real Estate ED.D. University of Southern California

A major program in accounting, management, or food service management prepares a student for a career in church or government service, or in private business.

**BACCALAUREATE MAJOR PROGRAMS**

- Accounting    A student majoring in accounting completes either of the following programs:
- Program A consists of the general requirements for the Bachelor of Arts degree (see *General Requirements*) and coursework in business and economics, including ACCT 201, 202, 203, 301, 302; CPTG 204; ECON 254, 255, 314 or 414, 324 or 424; BUAD 304 (3 units), 341, 355, 381, 382, 405, 454, 474; 12 upper division units in accounting or CPTG 334. A cognate requirement is MATH 265.
- Program B consists of the general requirements for the Bachelor of Science degree (see *General Requirements*) and coursework in business and economics, including ACCT 201, 202, 203, 301, 302, 404; CPTG 204; ECON 254, 255, 314 or 414, 324 or 424, 474; BUAD 304 (3 units), 341, 342, 355, 381, 382, 405, 454, 474; 16 upper division units in accounting. Cognate requirements are MATH 265; CPTG 334, and evidence of basic typewriting skills (high school or college coursework).



**Management** A student majoring in management completes either of the following programs:  
 Program A consists of the general requirements for the Bachelor of Arts degree (see *General Requirements*) and coursework in business and economics, including ACCT 201, 202, 203; 314 or 301, 302; CPTG 204; ECON 254, 255, 314 or 414, 324 or 424; BUAD 304 (3 units), 341, 355, 356, 381, 382, 405, 414, 454, 474; 8 upper division units from ACCT 354; CPTG 314 or 324, 334; BUAD 334, 342, 365, 366, 374, 455, 499; SECR 124, 324. A cognate requirement is MATH 265.

Program B consists of the general requirements for the Bachelor of Science degree (see *General Requirements*) and coursework in business and economics, including ACCT 201, 202, 203; 314 or 301, 302; CPTG 204; ECON 254, 255, 314 or 414, 324 or 424; BUAD 304 (3 units), 341, 342, 355, 356, 365, 366, 381, 382, 405, 414, 454, 474; 10 upper division units from ACCT 354; CPTG 306, 314 or 324, 334; BUAD 334, 374, 455, 499; SECR 124, 324. Cognate requirements are MATH 265 and evidence of basic typewriting skills (high school or college coursework).

**Food service management** A student majoring in food service management completes the general requirements for the Bachelor of Science degree and 63 units of coursework in accounting, economics, and management, including ACCT 201, 202, 203; BUAD 304, 341, 342, 355, 381, 382, 405, 414, 454; ECON 254, 255, 314 or 414, 324 or 424; and 36 units in foods and nutrition science, including FDNT 225, 314, 324, 416, 435, 479, 499. Cognate requirements are CPTG 204; MATH 265.

**Business education** A program in business education is offered through the Department of Secretarial and Business Education.

**Computing/business** A program in computing is offered through the Department of Mathematics. This program consists of a core of 52 units plus a business concentration of 48 units as follows: MATH 265; ACCT 314 or 301, 302; ECON 255; BUAD 341, 342, 355, 356, 381, 424, 454.

## MINOR SEQUENCES

The following minors in business are available with the consent of the department chairman:

Accounting, 28 units, including ACCT 201, 202, 203.

Management, 28 units, including ACCT 201, 202, 203; BUAD 355.

Economics, 28 units, including ECON 254, 255, 314, 324, 414, 424; BUAD 341.

Computing, 28 units, including CPTG 204, 314, 324, 334.

## ACCOUNTING

**Lower division** ACCT 201, 202, 203 Principles of Accounting 4, 4, 4 units  
 Modern accounting and analysis. Accounting for proprietorships, partnerships, and corporations. Business transactions and accounting analysis.  
 Prerequisite: Fulfillment of the general studies requirements in computational skills.

Upper division	<b>ACCT 301, 302 Intermediate Accounting</b>	<b>4, 4 units</b>
	Problems of valuation as related to assets, liabilities, and proprietorships. Accounting implications of corporate organizations; preparation and analysis of financial statements and reports.	
	Prerequisite: ACCT 201, 202, 203.	
	<b>ACCT 314 Managerial Accounting</b>	<b>4 units</b>
	Application of basic accounting knowledge to problems of financial administration. Statement analysis, cost control, cash and fund flows, long-range planning.	
	Prerequisite: ACCT 201, 202, 203.	
	<b>ACCT 354 Federal Income Tax Accounting</b>	<b>4 units</b>
	Provisions of federal income tax laws and regulations affecting the determination of net taxable income, with emphasis on preparation of individual returns.	
	Prerequisite: ACCT 201, 202.	
	<b>ACCT 367 Cost Accounting</b>	<b>4 units</b>
	Process and job-order cost accounting; further emphasis on standard costs, distribution costs, and flexible budgets.	
	Prerequisite: ACCT 201, 202, 203.	
	<b>ACCT 404 Auditing Theory and Practice</b>	<b>4 units</b>
	Procedures of the public accountant in verification of accounts and financial statements; preparation of audit working papers and audit opinions; analysis of auditing principles as applied in practice.	
	Prerequisite: ACCT 301, 302.	
	<b>ACCT 414 Current Accounting Theory</b>	<b>4 units</b>
	Concepts and standards found in current accounting literature; implementation of theory in practical applications.	
	Prerequisite: ACCT 301.	
	<b>ACCT 464 Advanced Accounting</b>	<b>4 units</b>
	Partnerships, consignments; branch and agency accounting and consolidations. Offered alternate years.	
	Prerequisite: ACCT 301, 302.	
	<b>ACCT 465 Fund Accounting</b>	<b>4 units</b>
	Theory and practice of the fund accounting concept as applied to government and not-for-profit organizations, including hospitals, colleges, and universities. Special emphasis on fund accounting applications in denominational institutions and conference-related organizations. Offered alternate years.	
	Prerequisite: ACCT 301, 302.	
	<b>ACCT 474 CPA Review</b>	<b>4 units</b>
	Preparation for the CPA examinations.	
	Prerequisite: ACCT 354, 404, 414, 464, or taking concurrently.	
	<b>ACCT 499 Directed Study</b>	<b>1-4 units</b>
	Self-directed research for varying credit. Limited to students majoring in the department.	
	Prerequisite: Consent of the department chairman.	

## MANAGEMENT

Upper division	<b>BUAD 304 Business Seminar</b>	<b>1/2 unit per quarter</b>
	Enrichment program for students interested in business: lectures and symposiums related to business and its role in society. May be repeated for additional credit.	
	<b>BUAD 334 Investment Management</b>	<b>2 units</b>
	Stock and bond markets from the viewpoint of investor or investment manager. Emphasis on security analysis, selection, timing, and management of investment portfolios.	

- BUAD 341 Descriptive Business Statistics** **4 units**  
 Data collection, presentation, and analysis; measure of central tendency, dispersion, skewness and kurtosis, simple linear regression and correlation, analysis of time series; emphasis on the integration of results.  
 Prerequisite: MATH 265.
- BUAD 342 Quantitative Analysis for Business Decisions** **4 units**  
 Fundamentals of analytic geometry and calculus; differential calculus, integral calculus, and selected applications of calculus; functions and managerial planning, and their use in economics and business as applicable.  
 Prerequisite: MATH 265; BUAD 341.
- BUAD 355 Principles of Management** **4 units**  
 The process approach used to decide between alternatives. Analysis and evaluation of cases conducive to development of a personal philosophy of management, in preparation for effective performance as a manager or a subordinate.
- BUAD 356 Personnel Management** **4 units**  
 Theory and practice of the management of people at work; organizational behavior concepts and points of view. Preparation both for managing people and staffing a personnel office.
- BUAD 365 Production Management** **4 units**  
 Production management in manufacturing, service, and distributive firms. Operations: processes, analyses, and decisions. Coordination of inventories, operations, and quality control.  
 Prerequisite: BUAD 341.
- BUAD 366 Purchasing and Inventory Control** **4 units**  
 Buying practices of institutional and industrial operations. Interrelationships of purchasing, quality control, receiving, and inventory control. Emphasis on quality, service, and price. Legal aspects of purchasing. Management patterns relating to proper maintenance of inventory records; materials handling and storage.
- BUAD 374 Principles and Practices of Insurance** **4 units**  
 Risk and insurance; applications to business management and personal affairs; concepts and methods of handling risk; insurance carriers, contracts, underwriting; loss prevention and settlement; government insurance programs; economic functions of insurance.
- BUAD 381, 382 Business Law** **4, 4 units**  
 Meaning and administration of law; torts, contracts, and governmental regulation. Case studies in law of sales, negotiable instruments, and agency; based on the Uniform Commercial Code.
- BUAD 405 Principles of Marketing** **4 units**  
 Institutions, functions, policies, and economics of the distribution of goods from producers to consumers.
- BUAD 414 Human Relations in Business** **4 units**  
 Concepts of human behavior as they affect the individual on the job. Employer and supervisory relations pertaining to leadership, employee morale, motivation, and communications. Skills emphasized include expression, listening, participation, self-awareness, and group dynamics.  
 Prerequisite: BUAD 355.
- BUAD 424 Business Internship** **12 units**  
 A twelve-week structured and supervised work experience. Taken concurrently with MGNT 499 (4 units) or ACCT 499 (4 units). Limited to juniors and seniors majoring in management or accounting.
- BUAD 454 Financial Management** **4 units**  
 Financial problems of business organization; sources of capital; principles of borrowing; relationship of finance to the business cycle; distribution of earnings; reorganization.  
 Prerequisite: ACCT 201, 202, 203.
- BUAD 455 Real Estate Principles** **4 units**  
 Real estate fundamentals, including ownership, appraisal law, practices, financing, values, transfers, trends, regulations, and economic effects. Principles useful to consumer or investor.



**BUAD 474 Administrative Policy and Decisions** **4 units**

The nature of decisions, objectives, policies, sequential decisions, sampling, measurement, revaluation, and control. An integration of business subject areas in a case of environment in terms of policy-level decision making.

Prerequisite: BUAD 342, 355, 454.

**BUAD 489 Denominational Policy and Business Ethics** **4 units**

Analysis of comprehensive case problems dealing with building and maintaining meaningful organizational policies in the context of religious, social, and ethical considerations. Special emphasis on denominational policies. Does not apply toward a major or minor.

Prerequisite: BUAD 355 or consent of the instructor.

**BUAD 499 Directed Study** **1-4 units**

Self-directed research for varying credit. Limited to students majoring in the department.

Prerequisite: Consent of the department chairman.

## **ECONOMICS**

**Lower division** **ECON 254 Principles of Macroeconomics** **4 units**

The economy; determinants of the general price level, national output, and employment.

Prerequisite: Fulfillment of the general studies requirement in computational skills.

**ECON 255 Principles of Microeconomics** **4 units**

Interrelationships of individual business firms, industries, consumers, laborers, and other factors of production in modern economy.

Prerequisite: Fulfillment of the general studies requirement in computational skills.

**Upper division** **ECON 314 Intermediate Macroeconomic Analysis** **4 units**

Problems of unemployment, economic instability, inflation, economic growth, and economic policies; national income determination, theories of interest and money, business cycles, and national economic growth. Emphasis on the impact of fiscal and monetary policies on income and employment, prices, investments, and economic growth. Offered alternate years.

Prerequisite: ECON 254, 255; MATH 265; BUAD 341.

**ECON 324 Intermediate Microeconomic Analysis** **4 units**

Theories of the firm, including production, pricing, and resource allocation. Development of demand theory through the theory of utility and modern theories of economic behaviors. Imperfections in the market mechanism and their effects on the market system. Offered alternate years.

Prerequisite: ECON 254, 255; MATH 265; BUAD 341.

**ECON 414 Money, Banking, and Credit** **4 units**

The banking system of the United States and its functions. The relationship of banking, money, and credit to the economy. Offered alternate years.

Prerequisite: ECON 254, 255; MATH 265; BUAD 341.

**ECON 424 Government and Business** **4 units**

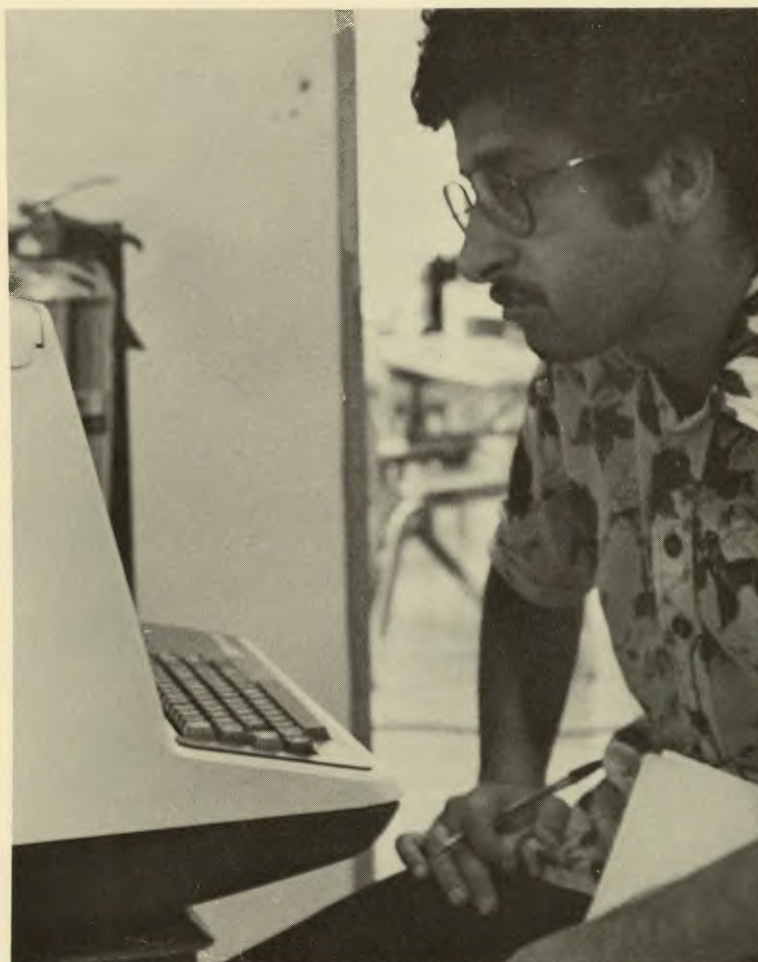
Industrial organization: structure and behavior of industries; causes of concentration and its effect on competition and prices. Public policy in regard to structure and behavior, especially antitrust policy. Offered alternate years.

Prerequisite: ECON 254, 255; MATH 265; BUAD 341.

## BUSINESS

Courses in this section are not open to students majoring in accounting or management.

- Lower division    **BUAD 235 Money Management for Young Moderns**    **4 units**  
Comprehensive financial problems and opportunities in society today. Realistic case problems, with direct applicability to personal financial planning.
- Upper division    **BUAD 484 Survey of Accounting**    **4 units**  
A comprehensive survey of accounting principles available as a prerequisite to graduate study in administration.
- BUAD 485 Survey of Economics**    **4 units**  
A comprehensive introduction to macroeconomics and microeconomics. Available as a prerequisite to graduate study in administration.



## DEPARTMENT OF CHEMISTRY

Chairman	WILLIAM M. ALLEN, Professor of Chemistry PH.D. University of Maryland
Faculty	LAURENCE W. BOTIMER, Professor of Chemistry PH.D. University of Maryland IVAN G. HOLMES, Professor of Chemistry PH.D. Oregon State University H. RAYMOND SHELDEN, Emeritus Professor of Chemistry M.S. University of Colorado LELAND Y. WILSON, Professor of Chemistry PH.D. University of Nebraska H. RAYMOND SHELDEN II, Associate Professor of Chemistry PH.D. University of California, Irvine WAYNE E. ZAUGG, Associate Professor of Chemistry PH.D. University of Washington RONALD A. GALAWAY, Assistant Professor of Chemistry PH.D. University of California, Riverside CLYDE L. WEBSTER, Assistant Professor of Chemistry PH.D. Colorado State University, Fort Collins
Collaborating faculty	RENE EVARD, Associate Professor of Biochemistry, School of Medicine PH.D. Michigan State University E. CLIFFORD HERRMANN, Associate Professor of Biochemistry, School of Medicine PH.D. Virginia Polytechnic Institute and State University GEORGE M. LESSARD, Assistant Professor of Biochemistry, School of Medicine PH.D. University of California, Riverside

The Department of Chemistry offers majors in chemistry, biochemistry, and physical science to prepare students for careers in these areas as well as the health sciences and teaching.

Graduate programs	Programs in biochemistry leading to the Master of Science and Doctor of Philosophy degrees are described in the BULLETIN of the Graduate School.
Preparation for teaching	A student preparing to teach chemistry at the secondary level should plan to qualify for teaching credentials, and during his freshman or sophomore year he should consult the credentials adviser in the School of Education for detailed information concerning requirements. A special program leading to these credentials is outlined below. A program leading to the master's degree in the teaching of chemistry is described in the BULLETIN of the School of Education.

### BACCALAUREATE MAJOR PROGRAMS

Core curriculum	All students majoring in chemistry start with a common <i>core curriculum</i> which is as follows: CHEM 111, 112, 113, 224, 351, 352, 371, 372, 373, 404 (1 unit). Cognate requirements are MATH 131, 132, and PHYS 211, 212. Computer skills particularly with BASIC, are strongly recommended.
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Chemistry A student majoring in chemistry completes either of the following programs:

Program A consists of the general requirements for the Bachelor of Arts degree (see *General Requirements*) and 60 units of coursework in chemistry, including the *core curriculum* and CHEM 353, 374, 421, 422. A cognate requirement is PHYS 213 or 214 or 215.

Program B, designed especially for students preparing for graduate studies, consists of the general requirements for the Bachelor of Science degree (see *General Requirements*) and 71 units of coursework in chemistry, including the *core curriculum* and CHEM 353, 374, 421, 422, and 499. Cognate requirements are PHYS 213 or 214 or 215 and MATH 133.

Biochemistry A student majoring in biochemistry completes either of the following programs:

Program A consists of the general requirements for the Bachelor of Arts degree (see *General Requirements*) and 58 units of coursework in chemistry, including the *core curriculum* and CHEM 481, 482, 483. Cognate requirements are BIOL 101, 102, 103.

Program B consists of the general requirements for the Bachelor of Science degree (see *General Requirements*) and 66 units of coursework in chemistry, including the *core curriculum* and CHEM 421, 481, 482, 483. Cognate requirements are BIOL 101, 102, 103.

Physical science The physical science program is designed to meet the state requirements for teaching credentials in the physical sciences with emphasis in chemistry. A student majoring in physical science completes the general requirements for a Bachelor of Science degree (see *General Requirements*) and 68 units of coursework in chemistry and physics, including the *core curriculum* (PHYS 211, 212 are considered part of the major) and CHEM 411 or 421; ESCI 205; PHYS 213, 214, 215, 304. Cognate requirements are BIOL 101, 102, 103; CHEM 204. For the teaching credential, the following education courses are also required: EDCI 204, 414, 430, 457; EDFO 305.

Earth science Also applicable on chemistry, biochemistry and physical science majors are: ESCI 334 (maximum of 2 units), 431 and 432.

## MINOR SEQUENCE

The following minor is available

Chemistry, 31 units, including CHEM 111, 112, 113, 371, 372.

## CHEMISTRY

Remedial CHEM 005 Pre-General Chemistry 4 units  
A specially structured course to meet the needs of students who have not fulfilled the prerequisites for general chemistry.

Lower division CHEM 101, 102, and 103 are designed for liberal arts students and those preparing to enter nursing and other allied health programs. Credit does not apply toward a

major program in chemistry or biochemistry or toward preprofessional requirements for dentistry, medicine, or medical technology. Three class periods, one three-hour laboratory per week (each).

CHEM 101 Introductory Inorganic Chemistry 4 units

CHEM 102 Introductory Organic Chemistry 4 units

Prerequisite: CHEM 101 or equivalent.

CHEM 103 Introductory Biochemistry 4 units

Prerequisite: CHEM 102 or equivalent.

CHEM 111, 112, 113 General Chemistry 5, 5, 5 units

Structure and behavior of inorganic matter and a mathematical treatment of chemical systems. Laboratory work for two quarters in the principles and techniques of quantitative analysis; qualitative analysis the third quarter. Four class periods, one three-hour laboratory per week.

Prerequisite: High school chemistry or physics or CHEM 005; general requirement in computation skills (see *General Requirements*).

CHEM 204 Laboratory Glassblowing 2 units

Construction of laboratory apparatus. Advanced projects for students who, on the recommendation of the instructor, take a second quarter for additional credit. Does not apply toward a major in the department.

CHEM 224 Analytical Chemistry 4 units

Certain chemical systems emphasized for their application to analytical practices. Laboratory inclusive of a limited amount of instrumentation in addition to basic quantitative techniques. Two class periods, two three-hour laboratories per week.

Prerequisite: CHEM 111, 112, 113.

CHEM 299 Directed Research 1-2 units

Prerequisite: Consent of instructor.

Upper division

CHEM 351 Physical Chemistry/Thermodynamics 4 units

Principles of thermodynamics applied to chemistry. Entropy and energy concepts used to predict direction and extent of reactions. Three class periods, one three-hour lab per week.

Prerequisite: CHEM 111, 112, 113; MATH 131, 132; PHYS 211, 212.

CHEM 352 Physical Chemistry/Dynamics 4 units

Principles of Kinetic Molecular Theory, chemical kinetics and transport processes. Concepts of distributions, rates of gradients, and determination of properties of macromolecules. Three class periods, one three-hour lab per week.

Prerequisite: CHEM 111, 112, 113; MATH 131, 132; PHYS 211, 212.

CHEM 353 Physical Chemistry/Quantum Mechanics 4 units

Principles of quantum mechanics applied to the H-like atom, harmonic oscillator, rigid rotator, orbitals, and spectra. Three class periods, one three-hour lab per week.

Prerequisite: CHEM 111, 112, 113; MATH 131, 132; PHYS 211, 212.

CHEM 371, 372, 373 Organic Chemistry 4, 4, 4 units

First and second quarters: an integrated study of the chemical and physical properties of aliphatic and aromatic compounds. Three class periods, three-hour laboratory per week.

Third quarter: includes biochemical compounds. Four class periods per week.

Prerequisites: CHEM 111, 112, 113.

CHEM 374 Organic Qualitative Analysis 4 units

Analysis of organic compounds using both solution and instrumental methods. Two class periods, two three-hour labs per week.

Prerequisite: CHEM 371, 372, 373.

CHEM 404 Chemistry Seminar  $\frac{1}{2}$  unit per quarter

May be repeated for credit with a maximum of 2 units applying toward the major.

	<b>CHEM 411 Inorganic Chemistry</b>	<b>4 units</b>
	Chemical families; modern bonding and reaction mechanism theory. Prerequisite: Consent of the instructor.	
	<b>CHEM 412 Topics in Inorganic Chemistry</b>	<b>4 units</b>
	Varied content from quarter to quarter, with specific areas listed in the class schedule. May be repeated with new content for additional credit. Prerequisite: CHEM 411.	
	<b>CHEM 421 Instrumental Methods I</b>	<b>4 units</b>
	Basic theory, instrument design and applications in spectrophotometry, microscopy, and chromatography. Two class periods, two three-hour laboratories per week. Prerequisite: CHEM 224 or equivalent.	
	<b>CHEM 422 Instrumental Methods II</b>	<b>4 units</b>
	Electronics, electrochemical and radiochemical methods. Two class periods, two three-hour laboratories per week. Prerequisite: CHEM 421.	
	<b>CHEM 471 Topics in Organic Chemistry</b>	<b>4 units</b>
	Varied content from quarter to quarter, with specific areas listed in the class schedule. May be repeated with new content for additional credit. Prerequisite: CHEM 371, 372, 373.	
	<b>CHEM 481 Biochemistry</b>	<b>4 units</b>
	Components of biological systems: proteins, enzymes, carbohydrates, nucleic acids. Prerequisite: CHEM 371, 372.	
	<b>CHEM 482 Biochemistry</b>	<b>4 units</b>
	Metabolism of carbohydrates, lipids, proteins, and nucleic acids. Prerequisite: CHEM 481.	
	<b>CHEM 483 Biochemistry</b>	<b>2 units</b>
	Advanced topics. Two class periods, two three-hour laboratories per week. Prerequisite: CHEM 482.	
	<b>CHEM 489 Science and the Christian Faith</b>	<b>4 units</b>
	Does not apply toward a major or minor.	
	<b>CHEM 498 Directed Research</b>	<b>1-4 units</b>
	<b>CHEM 499 Directed Study</b>	<b>1-4 units</b>
<b>Graduate</b>	<b>CHEM 511, 512 Advanced Inorganic Chemistry</b>	<b>4, 4 units</b>
	Prerequisite: CHEM 351, 352, 353, and consent of the instructor.	
	<b>CHEM 571, 572 Advanced Topics in Organic Chemistry</b>	<b>4, 4 units</b>
	Prerequisite: CHEM 373 and consent of the instructor.	
	<b>CHEM 581, 582 Advanced Topics in Biochemistry</b>	<b>4, 4 units</b>
	Prerequisite: CHEM 371, 372, and consent of the instructor.	
	<b>CHEM 699 Directed Research</b>	<b>1-4 units</b>
<b>EARTH SCIENCE</b>		
	<b>ESCI 334 Earth Science Fieldwork</b>	<b>1-4 units</b>
	Prerequisite: ESCI 205 or consent of instructor.	
	<b>ESCI 431, 432 Geochemistry</b>	<b>4, 4 units</b>
	Prerequisite: CHEM 111, 112, 113; ESCI 205 or consent of instructor.	
	<b>ESCI 531, 532 Advanced Topics in Geochemistry</b>	<b>4, 4 units</b>
	Prerequisite: CHEM 111, 112, 113; ESCI 205 and consent of instructor.	

#### ARTS AND SCIENCES



## DEPARTMENT OF COMMUNICATION

### Chairman

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- Faculty**
- BRIAN J. JACQUES, Professor of Speech  
PH.D. University of Michigan
- ROBERTA J. MOORE, Professor of Journalism and Public Relations  
PH.D. Syracuse University
- E. EVELYN BRITT, Associate Professor of Speech Pathology and Audiology  
D.S.C. Johns Hopkins University
- RODNEY R. ROWLEY, Associate Professor of Audiology  
PH.D. University of Oklahoma
- MELVIN S. COHEN, Assistant Professor of Speech Pathology  
PH.D. University of Utah
- JACK L. HARTLEY, Assistant Professor of Speech and Pathology  
M.A. University of Southern California
- JEAN B. LOWRY, Assistant Professor of Speech Pathology  
PH.D. Kent State University
- ROBERT S. STRETTER, Assistant Professor of Speech Pathology  
M.A. California State College, Stanislaus
- NANCY E. ALDRICH, Instructor in Speech Pathology and Audiology  
M.S. Loma Linda University
- CHARLOTTE A. BLANKENSHIP, Instructor in Speech Pathology  
M.A. Western Michigan University
- DAVID G. MCGANN, Instructor in Speech Pathology and Audiology  
M.A. Colorado State University

**Objectives** The Department of Communication teachers recognize that intercommunication, both on the personal level and through the mass media, is the foundation of a democratic society. At the center of that society is the individual, with his own understanding of his world and his interaction with and molding of his environment.

The Department of Communication emphasizes the importance of a liberal arts education with a firmly grounded knowledge of the communication process.

**Graduate programs** Programs leading to the Master of Science with a major in speech pathology or audiology are described in the BULLETIN of the Graduate School.

**Preparation for teaching** A student preparing to teach communication at the secondary level should plan to qualify for teaching credentials, and during his freshman or sophomore year should consult the credentials adviser in the School of Education for detailed information concerning requirements.

**Practicum** Internships in journalism, public relations, and radio and television are available to qualified students.

## BACCALAUREATE MAJOR PROGRAMS

**Mass media** A student majoring in mass media completes the general requirements for the Bachelor of Arts degree (see *General Requirements*) and 52 units of coursework in communication selected in consultation with the department adviser, including CMME 226. Cognate requirements are 12 units from ART 111, 112, 224; PHTO 224, 324; MATH 251, 252; SOCI 304; or other courses approved by the department adviser. No later than the beginning of the junior year the student must demonstrate proficiency in typing.

Three interdepartmental programs are also available. With the mass media major, an emphasis in photography is possible with classes in the Departments of Communication and of Industrial Studies. The Departments of Communication and English offer a major in writing. The Departments of Communication and of Secretarial and Business Education offer a major in secretarial administration/editorial.

**Speech communication** A student majoring in speech communication completes the general requirements for the Bachelor of Arts degree (see *General Requirements*) and 52 units of coursework in communication selected in consultation with the department adviser, including CMME 226; SPCH 216, 326, 328, 424 or COMM 488. Cognate requirements are 8 units selected from ART 111, 112, 244; PHTO 224; PSYC 344, 474, 544; SOCI 307.

**Speech pathology and audiology** A student majoring in speech pathology and audiology completes either of the following programs:

Program A consists of the general requirements for the Bachelor of Arts degree (see *General Requirements*) and 52 units of coursework in communication, including SPPA 277, 284, 324, 334, 354, 376; SPCH 315; remaining units selected in consultation with the department adviser from SPCH 216, 326, 417; SPPA 424, 434, 435, 444, 454, 457, 464, 475, 477, 485, 486, 487, 488, 499. (Combined maximum of 5 units SPPA 457, 487, 488 apply on speech pathology and audiology major.) Cognate requirements are BIOL 111, PSYC 356, or EDCE 404 in the School of Education.

Program B consists of the general requirements for the Bachelor of Science degree (see *General Requirements*) and 52 units of coursework in communication, including SPPA 277, 284, 324, 334, 354, 376; SPCH 315; remaining units selected in consultation with the department adviser from SPCH 216, 326, 417; SPPA 424, 434, 435, 444, 454, 457, 464, 475, 477, 485, 486, 487, 488, 499. (Combined maximum of 5 units SPPA 457, 487, 488 apply on speech pathology and audiology major.) Cognate requirements are BIOL 111, MATH 251, PSYC 356 or EDCE 404 in the School of Education; 12 units selected in consultation with the department adviser from ANTH, BIOL, CFSC, MATH, PSYC, EDCE or EDFO in the School of Education.

The speech pathology program is approved by the Commission for Teacher Preparation and Licensing to prepare students for a California Clinical Rehabilitative Services Credential in Language, Speech, and Hearing. Requirements for this credential include the completion of a fifth year. A student preparing for a career in California schools should consult the department adviser regarding specific course and practicum requirements of this credential.

**Writing** A program in writing is offered through the Department of English.

## MINOR SEQUENCES

The following minors in communication are available:

Speech communication, 28 units, including SPCH 104, 216, 328, 417; RELP 361 or 362 may apply toward this sequence for students majoring in religion.

Mass media, 28 units, including CMME 226.

Speech pathology and audiology, 28 units, including SPPA 277, 284, 376; SPCH 315; 12 units selected from SPPA 324, 334, 354, 387, 444, 454, 464, 477, 486. A cognate requirement is BIOL 111.

## SPEECH COMMUNICATION

<b>Lower division</b>	<b>SPCH 104 Fundamentals of Speech</b> <b>4 units</b>
	Oral communication of ideas to others; self-appraisal; evaluation of the speech of others. Does not apply toward any major in communication.
	<b>SPCH 204 Oral Interpretation</b> <b>4 units</b>
	Theory and practice of oral communication of poetry, prose, drama; contributing to an understanding and appreciation of literature.
	<b>SPCH 216 The Speaking Voice</b> <b>4 units</b>
	Study and development of vocal habits and skills which produce communicative speech, through voice analysis, appropriate exercises, and interpretative readings.
<b>Upper division</b>	<b>SPCH 305 Projects in Interpretation</b> <b>1-4 units</b>
	Individual development in dramatic form and staging techniques. Prerequisite: Consent of the instructor.
	<b>SPCH 315 Transcription Phonetics</b> <b>3 units</b>
	Speech sounds as elements of language; application to understanding and speaking languages. Emphasis on the International Phonetic Alphabet and its application.
	<b>SPCH 320 Technical Production</b> <b>1-3 units</b>
	Development of proficiency in the use of light and sound equipment and overall stagecraft in program production. Utilization of various University-staged activities as laboratory experience. Prerequisite: Consent of instructor.
	<b>SPCH 325 Oral Reading of the Bible</b> <b>4 units</b>
	Primarily for the ministerial student wishing to develop ability in effective, meaningful oral communication of Scripture.



- SPCH 326 Semantics** **4 units**  
Functions of language in a cultural context; ways in which meaning is derived from symbols, words, and actions.
- SPCH 328 Persuasion** **4 units**  
The psychology of persuasion. Non-Aristotelian concepts derived from communication theory research, psychology, and modern behavioral studies. Practice in oral and written forms.
- SPCH 329 Advanced Public Address** **4 units**  
Practical experience in platform speaking. Emphasis on organization, logic, and persuasive concepts. Analyses and critiques.
- SPCH 404 Practicum in Play Direction** **1-4 units**  
Skits, readings, and dramatic productions.  
Prerequisite: Consent of the instructor.
- SPCH 406 Dramatic Activities for Learning** **4 units**  
Theory and practice in the use of creative dramatics, storytelling, puppetry, assembly programs, role-playing, and other aspects of dramatics as tools for the teacher, group worker, recreation major, minister, and others who work with people of any age.
- SPCH 417 Discussion and Argumentation** **4 units**  
Forces contributing to the productivity and cohesiveness of groups; nature of group leadership and organization.
- SPCH 424 Classical Rhetorical Theory** **4 units**  
Rhetorical concepts in the classical world, with emphasis on Plato, Aristotle, Cicero, and Quintilian in relation to modern rhetorical theory. Offered alternate years.
- SPCH 425 Readers' Theater** **4 units**  
Theory, principles, and techniques of the interpretation of literature through the medium of Readers' Theater, involving several participants utilizing the *minimum* of stage properties, motion, and costumes.

## COMMUNICATION MEDIA

- Lower division**
- CMM5 226 Mass Media** **4 units**  
Print and broadcast media and their relationship to today's world.
- CMME 227, 228 Newswriting** **3, 3 units**  
Gathering news and writing news stories; assignments such as a beginning reporter encounters in his first newspaper job.
- CMME 234 Photojournalism** **4 units**  
Pictures to give graphic impact to news and feature stories. Processing and editing of pictures taken by the student.
- CMME 244 Narrative Writing** **3 units**  
Writing short stories; analyzing short narratives in current periodicals to see how successful writers handle their material.
- CMME 251, 252, 253 Principles of Broadcasting** **4, 4, 4 units**  
Introduction to broadcast production and theory. Laboratory includes participation in operation of campus radio stations KLLU and KEMR.
- CMME 255 Fundamentals of Cinematography** **4 units**  
Personal cinematic expression. Practical experience in various phases of film making. Individual projects.
- Upper division**
- CMME 327 Multi-Media Programing Techniques** **4 units**  
Planning and creation of multi-media productions. Tailored to students' special interests.

- CMME 329 Advanced Reporting and News Editing** **3 units**  
Reporting public affairs; selecting and preparing news stories for publication; writing headlines. Offered alternate years.  
Prerequisite: CMME 227, 228.
- CMME 335 Seminar in Religious Journalism** **4 units**  
History of religious journalism in America; current practices and problems. Individual research projects in church news coverage and religious magazines.
- CMME 336 Religious Writing** **3 units**  
Techniques useful in various types of religious articles. Analysis of markets for freelance writing. Offered alternate years.
- CMME 337, 338 Magazine Article Writing** **3, 3 units**  
Fact writing; gathering material, analyzing the magazine market, writing, preparing manuscripts for publication. Offered alternate years.
- CMME 340 Public Opinion** **4 units**  
An introduction to public opinion, including its development and change; its influence in public affairs and its measurement.
- CMME 344 Workshop in School Publications** **4 units**  
Writing and editing. Designed for persons involved in production of school newspapers, year-books, etc. Does not apply toward a major in mass media. Offered alternate years.
- CMME 345 Institutional Public Relations** **4 units**  
Origin, objectives, and contemporary practice of institutional public relations as a social process. Offered alternate years.
- CMME 346 Public Relations** **4 units**  
Use of mass media in public relations; planning and developing public relations programs involving both print and broadcast media. Offered alternate years.
- CMME 353 Radio Programing** **4 units**  
Examination of radio formats and their demographic application.
- CMME 354 Radio Station Management** **4 units**  
Duties of station manager and relations with personnel and regulatory agencies.
- CMME 355 Creative Film Making** **4 units**  
Cinematic elements; production techniques; equipment; audience evaluations; idea development from treatment to editing. Experience in communicating through film. Individual projects. Offered alternate years.  
Prerequisite: Consent of the instructor.
- CMME 365 Script Writing** **4 units**  
Techniques involved in writing scripts. Principles of visual and sound synchronization. Offered alternate years.
- CMME 427 Newspaper Makeup and Production** **4 units**  
Various styles of makeup; production procedures. Practical experience; field trips. Offered alternate years.  
Prerequisite: CMME 227, 228, 329.
- CMME 434, 435 Magazine Editing** **3, 3 units**  
Development of editorial formulas; selection of articles and illustrations; makeup. Term project: in CMME 434, an analysis and restyling of an existing magazine; in CMME 435, the planning of a new magazine. Offered alternate years.
- CMME 436 Seminar in Magazine Journalism** **4 units**  
Development of magazines in America; current editorial practices. Individual research. Offered alternate years.

- CMME 445 Practicum in Journalism and Public Relations** 1-12 units  
On-the-job experience arranged and supervised for advanced students.
- CMME 454 Practicum in Radio** 1-4 units  
On-the-job experience arranged and supervised for advanced students at a local radio station.
- CMME 455 Documentary Film Production Techniques** 4 units  
Analysis of visual forms, composition, lighting, special effects. Growth, implication, and use of the nonfiction film in public service programing, education, industry, and church, with emphasis on creativity and aesthetic excellence. Individual projects. Laboratory. Offered alternate years.  
Prerequisite: CMME 355.

## **SPEECH PATHOLOGY AND AUDIOLOGY**

The student must make formal application to receive consent of the supervisor and the department to enter SPPA 457 and SPPA 487. In considering his application the department will evaluate his academic performance and professional goals.

- Lower division**
- SPPA 277 Development of Speech and Language** 4 units  
Normal speech and language; physiological and environmental factors; genetics of language.
- SPPA 284 Introduction to Speech Pathology and Audiology** 3 units  
Major types of disorders; etiology and treatment. A survey course for students majoring in speech pathology and audiology, prospective teachers, and others who may encounter speech disorders in their professions. Observation and participation.
- Upper division**
- SPPA 324 Language Disorders of Children** 4 units  
Impairments of language development in children. Assessment, program planning, and methods of intervention. Observation and participation.  
Prerequisite: SPPA 277.
- SPPA 334 Articulation Disorders** 4 units  
Definition, classification, etiology, diagnosis, and treatment of articulation disorders. Introduction to clinical procedures. Observation and participation.  
Prerequisite: SPCH 315
- SPPA 354 Hearing Problems and Basic Audiometry** 4 units  
Anatomy and physiology of the auditory mechanism; the nature of the acoustic stimulus; disorders of the ear; problems of the hard-of-hearing. Pure-tone audiometry. Applicable toward California audiometric certification.
- SPPA 376 Speech and Hearing Science** 5 units  
Acoustics, anatomy and physiology of auditory-vocal communicative processes.  
Prerequisite: BIOL 111.
- SPPA 387 Observation and Participation** 1 unit  
Attendance at scheduled sessions of a client throughout the quarter to observe clinical management of the communicatively handicapped and to participate as an assistant to the clinician. Limited supervised clinical practice. May be repeated once for additional credit.
- SPPA 424 Adult Language Pathology** 4 units  
Impairments of language and speech related to organic neuropathology. Observation and participation. Offered alternate years.  
Prerequisite: SPPA 376.
- SPPA 434 Disorders of Fluency** 4 units  
Stuttering and other disorders: characteristics, theories of etiology, and principles of management. Observation and participation. Offered alternate years.



- SPPA 435 Phonatory Disorders** 4 units  
Definition, classification, etiology, diagnosis, and treatment of voice disorders. Pitch, intensity, quality and resonance, and laryngeal voicing. Observation and participation. Offered alternate years.  
Prerequisite: SPPA 376.
- SPPA 444 Organic Speech Disorders** 4 units  
Classification, cause, and manifestations: cerebral palsied, cleft palate, and other oral-facial anomalies; dental malocclusion; speech of the hard-of-hearing. Observation and participation. Offered alternate years.  
Prerequisite: SPPA 376.
- SPPA 454 Audiometry** 4 units  
Objectives and uses of hearing tests for diagnostic and rehabilitative purposes. Techniques for administering auditory tests and for interpreting their results, with emphasis on pure-tone audiometry. Applies toward California audiometric certification.  
Prerequisite: SPPA 354.
- SPPA 457 Clinical Practice in Audiology** 1-4 units  
Supervised experience in diagnosis and management of hearing impairment. Thirty clock hours of clinical practice required for each quarter unit of credit. Maximum of 5 units in SPPA 457, 487, 488, apply toward a major in speech pathology and audiology.  
Prerequisite: SPPA 354, 454 (may be concurrent); consent of the supervisor.
- SPPA 464 Aural Rehabilitation** 4 units  
Approaches to achieving optimal functioning with hearing impairment; auditory training, speech reading, amplification, voice conservation, language development and improvement, and counseling.  
Prerequisite: SPPA 354, 454.
- SPPA 475 Acoustic and Physiologic Phonetics** 4 units  
Lecture, discussion, and demonstration of speech-sound pattern production and analysis.  
Prerequisite or concurrent registration: SPCH 315; SPPA 376.
- SPPA 477 Psycholinguistics** 4 units  
Mental processes underlying the acquisition and use of language; structure and meaning of language; perception and cognition.  
Prerequisite: SPPA 277.
- SPPA 485 Procedures and Materials in Speech and Language Pathology** 3 units  
Role of the specialist in education; techniques and procedures for speech and hearing programs in elementary and secondary schools; relation of speech and hearing services to the total educational program. Observation and participation.  
Prerequisite: SPPA 324, 334.
- SPPA 486 Diagnostic Methods in Speech and Language Pathology** 3 units  
Purpose for assessment; procedures employed in describing and diagnosing language and speech impairments.  
Prerequisite: PSYC 356 or EDCE 404 in the School of Education.
- SPPA 487 Clinical Practice in Speech and Language Pathology** 1-4 units  
Supervised practice in diagnosis and therapy. Thirty clock hours required for each unit of credit. Maximum of 5 units in SPPA 457, 487, 488 apply toward a major in speech pathology and audiology.  
Prerequisite: SPPA 324 or 334; consent of the supervisor.
- SPPA 488 Directed Teaching in Speech and Language Pathology** 8-12 units  
Supervised teaching on the elementary and/or secondary level. Twenty-two clock hours required for each unit of credit. Maximum of 5 units in SPPA 457, 487, 488 apply toward a major in speech pathology and audiology.  
Prerequisite: SPPA 334, 424, 434, 435, 444, 485, 486, 487; completion of 120 hours of supervised clinical practice; consent of the supervisor.

	SPPA 499	Directed Study Independent study in consultation with the adviser. For advanced students.	2-4 units
Graduate	SPPA 524	Language Disorders of Children, Advanced	3 units
	SPPA 525	Communication Training for the Developmentally Disabled	3 units
	SPPA 544	Cleft Palate	3 units
	SPPA 554	Advanced Audiological Assessment	4 units
	SPPA 555	Middle Ear Analysis	3 units
	SPPA 556	Cochlear-Vestibular Analysis	3 units
	SPPA 557	Central Auditory Analysis	3 units
	SPPA 558	Pediatric Audiology	3 units
	SPPA 564	Auditory Habilitation and Hearing Aids	4 units
	SPPA 578	Psychoacoustics and Instrumentation	4 units
	SPPA 585	Professional Aspects of Speech Pathology and Audiology	3 units
	SPPA 586	Diagnostics in Speech and Language Pathology, Advanced	3 units
	SPPA 587	Externship in Speech/Language Pathology	1-4 units
	SPPA 589	Externship in Audiology	1-4 units
	SPPA 598	Research Methods in Communicative Disorders	3 units
	SPPA 654	Seminar: Audiology	3 units
	SPPA 664	Seminar: Habilitative Audiology	3 units
	SPPA 684	Seminar: Adult Language Disorders	3 units
	SPPA 685	Seminar: Stuttering	3 units
	SPPA 686	Seminar: Phonatory Disorders	3 units
	SPPA 687	Seminar: Open Seminar in Speech/Language Pathology (Problems delineated by title such as "Articulation.")	3 units
	SPPA 688	Seminar: Habilitative Audiology	3 units
	SPPA 697	Research	2-6 units
	SPPA 698	Thesis	3-6 units
	SPPA 699	Directed Study	1-3 units

## COMMUNICATION, GENERAL

- Lower division**    **COMM 299 Individual Instruction**    **1-4 units**  
To improve proficiency. May be repeated for additional credit to a maximum of 4 units.  
Prerequisite: Consent of the instructor.
- Upper division**    **COMM 488 Theory of Communication**    **4 units**  
Modern developments and experimentation in communication theory. Offered alternate years.
- COMM 489 Christian Communication**    **4 units**  
Message of Christianity as the medium for closing the communications gap between man and God. Philosophies of communication. Does not apply toward a major or minor.
- COMM 499 Directed Study**    **2-4 units**  
Independent study in consultation with the adviser. For advanced students.





## DEPARTMENT OF CONSUMER RELATED SCIENCES

Chairman	MARY P. BYERS, Professor of Consumer Related Sciences M.S. Columbia University
Faculty	YVONNE P. SONNELAND, Associate Professor of Consumer Related Sciences M.H.E.C. Oregon State University
	JUDY E. OSBORNE, Assistant Professor of Consumer Related Sciences M.A.T. Andrews University
	PAUL W. ROESEL, Assistant Professor of Consumer Related Sciences M.S. California State University, San Jose
	KATHLEEN M. RUF, Assistant Professor of Consumer Related Sciences PH.D. University of Wisconsin
	MARILYN M. BEACH, Instructor in Consumer Related Sciences M.A. Loma Linda University
	MICHELLE HENRY, Instructor in Consumer Related Sciences M.A. George Peabody College for Teachers
	ELIZABETH ANN WEAR, Instructor in Consumer Related Sciences M.A. Hood College A.G.S. University of Maryland
Collaborating faculty	KATHLEEN K. ZOLBER, Professor of Nutrition, School of Health PH.D. University of Wisconsin
Lecturers	PAUL S. DAMAZO, Lecturer in Food Service Administration M.S. Florida State University
	BONNITA M. FARMER, Lecturer in Textiles M.S. University of Illinois
	R. ELOISE MURDOCH, Lecturer in Interior Decorating B.S. Pacific Union College
	GAIL T. RICE, Lecturer in Family Health M.A. Andrews University
Staff	EDITH M. RHYNUS, Assistant Clinical Instructor in Consumer Related Sciences

**Objectives** The objectives of the Department of Consumer Related Sciences are to provide specialized instruction as preparation for professional careers and to emphasize the paramount interests and well-being of the individual, the consumer, and the family.

**Preparation for teaching** A student preparing to teach home economics at the secondary level should plan to qualify for teaching credentials and during his freshman or sophomore year should consult the credentials adviser in the School of Education for detailed information concerning requirements.

A program leading to the Master of Arts degree in the teaching of home economics is described in the BULLETIN of the School of Education.

## BACCALAUREATE MAJOR PROGRAMS

Core curriculum	All students majoring in consumer related sciences take the core curriculum which is as follows: CFSC 244, 274, 286; FDNT 225, 318; HMEC 289, 304 (3 units), 444, 446, 447, 475; INTR 356, 448; TXTL 254.
Child development	A student majoring in child development completes the general requirements for the Bachelor of Science degree (see <i>General Requirements</i> ) and 91 units of coursework in consumer related sciences including the core curriculum and CFSC 275, 276, 277, 476, 477; 18 units of fieldwork, including CFSC 284 (4 units), 484 (12 units), 485. Cognate requirements are BIOL 107 or 112; EDCE 460 in the School of Education; ENGL 415; PEAC 133, 181; PSYC 104, 224; SPPA 277.
Liberal arts/ child development emphasis	The College of Arts and Sciences in collaboration with the School of Education offers a liberal arts diversified major with an emphasis in child development. This is an undergraduate program which leads to teaching credentials. The major consists of 126 units (40 upper division). Consult with adviser for specific requirements.
Clothing and textiles	A student majoring in clothing and textiles completes the general requirements for the Bachelor of Science degree (see <i>General Requirements</i> ) and 76 units of coursework in consumer related sciences, including the core curriculum and HMEC 226; TXTL 255, 258, 274, 364, 457, 467. Cognate requirements are CHEM 101, 102; ACCT 201; ART 111. Recommended courses are HMEC 247, 485.
Home economics	A student majoring in home economics completes the general requirements for the Bachelor of Science degree (see <i>General Requirements</i> ) and 68 units of coursework in consumer related sciences, including the core curriculum and FDNT 204; HMEC 226; TXTL 274, 364, 457. Cognate requirements are BIOL 107; CHEM 101, 102, 103; EDCI 438 in the School of Education; PSYC 104, 224. Recommended courses are SOCI 104 or ECON 254.
Food service management	A program in food service management, intended to prepare the student for a management position in an educational or industrial food service or in a commercial cafeteria or restaurant, is offered through the Department of Business and Economics.
Dietetics	Students interested in clinical or administrative dietetics should consult the BULLETIN of the School of Allied Health Professions for information concerning professional programs offered on the Loma Linda campus and for an outline of predietetics requirements.

## MINOR SEQUENCES

The following minors in consumer related sciences are available:

Clothing, 28 units (16 upper division) selected in consultation with the department adviser.

Home economics, 29 units, including CFSC 274, 489; FDNT 204, 225; HMEC 304 (1 unit), 446; TXTL 254, 256.

## ASSOCIATE DEGREE PROGRAMS

### Child and family Science

A student in the associate degree program in child and family science completes the general requirements for the Associate in Science degree (see *General Requirements*) and 37 units of coursework in consumer related sciences, including CFSC 244, 274, 275, 276, 277, 284 (8 units); FDNT 225; HMEC 304 (1 unit). Cognate requirements are BIOL 107; CFSC 489; PEAC 133, 181; PSYC 104, 224; SPPA 277. Suggested elective ENGL 415.

## CHILD AND FAMILY SCIENCE

### Lower division

#### CFSC 244 Family Health

4 units

Individual and family health factors focusing on human sexuality, birth control, pregnancy and childbirth, newborn and child health, handling emergencies, aging and death.

#### CFSC 274 Dynamics of Love and Marriage

4 units

Maturity, compatibility, conflict, religious factors; specific areas of adjustment in marriage.

#### CFSC 275 Socialization in Child Development Centers

4 units

Characteristics of children; effective methods of working with children; impact of teacher behavior on behavior of children; teacher-parent and teacher-teacher relationships. Three class hours, two laboratory hours per week.

#### CFSC 276 Developing Creativity in Young Children

4 units

Development of creativity and self-expression in preschool children through stories, music, rhythms, play activities, and creative media. Three class hours, two laboratory hours per week.





- CFSC 277 Learning Experiences for Young Children** **4 units**  
 Selection and use of play materials and equipment for group activities; function of these materials in the child's development. Three class hours, two laboratory hours per week.
- CFSC 284 Preschool Experience** **2-4 units**  
 Observation and participation in a child-development center program. May be repeated for additional credit.  
 Prerequisite: CFSC 275, 276, 277, or consent of the instructor.
- Upper division **CFSC 476 Seminar in Child Study** **4 units**  
 Organization and management of the preschool classroom. Principles of child development applied to group and individual work with parents; formulation and presentation of programs for parents. Taken concurrently with CFSC 484.  
 Prerequisite: PSYC 224.
- CFSC 477 Administration of Child Development Centers** **4 units**  
 Developing centers; essential planning procedures, including curriculum, guidance, health protection, housing, equipment, food service, budgeting; parent-staff involvement, social services, community relations.  
 Prerequisite: CFSC 275, 276, 277; or equivalent; or consent of the instructor.
- CFSC 484 Directed Teaching in Child Development Centers** **12 units**  
 Taken concurrently with CFSC 476.  
 Prerequisite: CFSC 275, 276, 277, or consent of the instructor.
- CFSC 485 Fieldwork in Family and Community Services** **2-4 units**  
 Supervised experience in providing help or instruction to family members in various contexts; systematic observation, codification, and reporting of behavior. May be repeated for additional credit.  
 Prerequisite: Consent of the instructor.
- CFSC 486 Parenting** **2 units**  
 Current theories related to the effects of various parenting methods. Emphasis on designing a learning environment within the home for the holistic development of the child.
- CFSC 489 Guidance of the Young Child** **4 units**  
 Analysis of Ellen G. White's principles of influencing the behavior of children. The effects of family interaction and the development of a philosophy of child guidance that will permit children to develop their individual potentialities.
- CFSC 574 Family Relationships** **4 units**  
 Interaction and interpersonal relationships through various stages of the family life cycle; influence of family on development of values, goals, attitudes, behavior patterns.  
 Prerequisite: CFSC 274 or consent of the instructor.

## CONSUMER SCIENCE

- Lower division **HMEC 226 Orientation to Occupational Programs in Home Economics** **1 unit**  
 Analysis of established and emerging consumer related occupations to help the student assess his interests within this major.
- HMEC 247 Color: Theory and Application** **4 units**  
 In-depth study of color; its use in and influence on wardrobe, home, business; practical application of theory.
- HMEC 289 Personal Development for the Career Woman** **4 units**  
 Social and professional codes of ethics; habits, manners, and grooming.
- HMEC 299 Directed Study** **1-4 units**  
 Individual guided study. Limited to students majoring in the department.

Upper division	<b>HMEC 304 Consumer Sciences Seminar</b>	<b>1/2 unit</b>
	Required of all students majoring in a program in the Department of Consumer Related Sciences for a total of 3 units.	
	<b>HMEC 404 Workshops in Consumer Related Sciences</b>	<b>1-4 units</b>
	<b>HMEC 444 Management in Family Living</b>	<b>4 units</b>
	Management principles in relation to family resources, goals, and values; principles of work simplification. Three class hours, three laboratory hours per week. Offered alternate years.	
	Prerequisite: Senior standing or consent of the instructor.	
	<b>HMEC 446 Consumer Issues</b>	<b>4 units</b>
	Personal and family money management, consumer decision making, credit, evaluation of consumer information and protection.	
	Prerequisite: Upper division standing.	
	<b>HMEC 447 Household Equipment</b>	<b>2 units</b>
	Selection, use, and care of household appliances, emphasis on microwave cookery. Offered alternate years.	
	<b>HMEC 475 Demonstration Techniques</b>	<b>4 units</b>
	Selection, organization, and presentation of material for professional home economics demonstrations.	
	Prerequisite: Departmental major or consent of the instructor.	
	<b>HMEC 485 Home Economics Field Experience</b>	<b>1-4 units</b>
	<b>HMEC 499 Directed Study</b>	<b>2-4 units</b>
	Individual guided study. Limited to students majoring in the department.	
	<b>HMEC 504 Workshops in Selected Topics</b>	<b>1-4 units</b>
	<b>HMEC 505 Home Economics in Contemporary Society</b>	<b>4 units</b>
	Required for all candidates for Master of Arts degree in secondary teaching in home economics.	
	<b>HMEC 544 Trends in Consumer Problems</b>	<b>2-4 units</b>
	<b>HMEC 567 Trends and Issues in Home Economics</b>	<b>2-4 units</b>
	<b>HMEC 584 Seminars in Selected Topics</b>	<b>2-4 units</b>
	<b>HMEC 595 Readings and Conferences</b>	<b>2-4 units</b>
	<b>HMEC 597 Selected Problems in Consumer Related Sciences</b>	<b>4 units</b>
	<b>HMEC 598 Project</b>	<b>3-4 units</b>
	<b>HMEC 599 Research and Thesis</b>	<b>4 units</b>

## FOODS AND NUTRITION SCIENCE

Lower division	<b>FDNT 204 Principles of Preparation</b>	<b>4 units</b>
	Principles of physical and chemical factors; sanitary handling and storage in food preparation and preservation. Three class hours, two laboratory hours per week.	
	<b>FDNT 225 Human Nutrition</b>	<b>4 units</b>
	Nutrients, their digestion and metabolism; nutritional requirements at various age levels. For the medically oriented student.	
	<b>FDNT 226 Orientation to Nutrition Care Service</b>	<b>5 units</b>
	Dietetics technician in hospital and nutrition education fields. Fifteen laboratory hours per week.	
	Prerequisite or concurrent registration: FDNT 225, 234.	
	<b>FDNT 227 Nutrition in Disease</b>	<b>4 units</b>
	Application of nutrition principles to abnormal physical conditions and modified diet requirements. Offered alternate years.	
	Prerequisite: FDNT 225; BIOL 107; or consent of the instructor.	
	<b>FDNT 228 Child Nutrition</b>	<b>4 units</b>
	Basic concepts of human nutrition with special emphasis on nutritional needs and problems during pregnancy, lactation, and childhood.	
	<b>FDNT 234 Nutrition in Health Care Delivery Systems</b>	<b>2 units</b>
	Offered alternate years.	
	<b>FDNT 235 Introduction to Food Service Administration</b>	<b>4 units</b>
	Application of management theory to food service management, with emphasis on organization, system layout and design, purchasing, labor relations.	
	<b>FDNT 264 The Art of Bread Baking</b>	<b>2 units</b>
	Offered alternate years.	
	<b>FDNT 265 Food Preservation</b>	<b>2 units</b>
	Offered alternate years.	
	<b>FDNT 286 Fieldwork in Nutrition Care Service</b>	<b>4 units</b>
	Practical experience in the hospital dietary service and related areas. May be repeated once for additional credit. Fifteen laboratory hours per week. Taught as needed.	
	Prerequisite: FDNT 225, 226, 227, 234.	
	<b>FDNT 287 Fieldwork: Nutrition in Disease</b>	<b>4 units</b>
	Practical experience in working with the hospital or nursing home patient on a modified diet. May be repeated once for additional credit. Fifteen laboratory hours per week. Taught as needed.	
	Prerequisite: FDNT 225, 226, 227, 234	
Upper division	<b>FDNT 314 Quantity Foods</b>	<b>4 units</b>
	Fundamentals of institutional food preparation, use and care of equipment, safety and sanitation. Two class hours, six laboratory hours per week. Offered alternate years.	
	<b>FDNT 318 Meal Planning and Preparation</b>	<b>4 units</b>
	Family meals; food selection, preparation, and service in relation to management of time, energy, and money. Three class hours, three laboratory hours per week.	
	Prerequisite: FDNT 204.	
	<b>FDNT 324 Catering</b>	<b>4 units</b>
	Planning, costing, preparing, and serving banquets, buffets, gourmet, and special occasion foods. May be repeated once for additional credit. Two class hours, six laboratory hours per week. Offered alternate years.	



- FDNT 414 Vegetarian Cookery for the Family** **2 units**  
 Planning and preparation of balanced meatless meals. One class hour, two laboratory hours per week.
- FDNT 416 Experimental Foods** **4 units**  
 Relation of physical and chemical reactions in food preparation to product quality; application of experimental procedures. Three class hours, three laboratory hours per week. Taught as needed.  
 Prerequisite: CHEM 101, 102.
- FDNT 435 Organization and Administration of Food Services** **4 units**  
 Layout and design; materials selection and care; work simplification. Taught as needed.
- FDNT 479 Food Service Management Internship** **12 units**  
 Taught as needed.
- FDNT 499 Directed Study** **1-4 units**

## INTERIOR DESIGN

- Lower division **INTR 246 Interior Decorating** **2 units**
- Upper division **INTR 356 Decorating and Furnishing the Home** **4 units**  
 Art principles applied to selection and use of furniture, fabrics, and accessories appropriate for various types of homes. Three class hours, three laboratory hours per week.
- INTR 448 Housing** **4 units**  
 Planning and financing; sociological and aesthetic aspects. Layman's approach to drawing floor plans and perspective sketches of room plans. Offered alternate years.

## TEXTILES AND CLOTHING

- Lower division **TXTL 252 Basic Construction Techniques** **2 units**
- TXTL 254 Clothing Construction** **4 units**  
 Techniques of garment construction. Instruction adapted to student's previous experience. Two class hours, six laboratory hours per week.
- TXTL 255 Pattern Making** **4 units**  
 World of the couturiere; use of the commercial basic pattern to develop designs for fashionable clothes for women.  
 Prerequisite: TXTL 254 or consent of the instructor.
- TXTL 257 Clothing and You** **4 units**  
 Selection and purchase of clothing, with emphasis on line, art elements, fabric, and design. Offered alternate years.
- TXTL 258 Clothing Construction for the Family** **4 units**  
 Techniques of garment construction, including tailoring for family members of different ages and both sexes. Two class hours, six laboratory hours per week.  
 Prerequisite: TXTL 254 or consent of the instructor.

	TXTL 267 Sewing with Knits	2 units
	TXTL 274 Creative Stitchery I	2 units
Upper division	TXTL 364 Introduction to Textiles	4 units
	Textile fibers, yarns, fabrics, and finishes, with emphasis on selection, use, and care by the consumer. Two class hours, six laboratory hours per week. (Transfer students who have had a corresponding course without laboratory may enroll for laboratory only.)	
	TXTL 374 Creative Stitchery II	2 units
	May be repeated.	
	TXTL 457 Techniques of Fitting	4 units
	Application of pattern alteration and garment fitting techniques.	
	Prerequisite: Consent of the instructor.	
	TXTL 467 Advanced Textiles	4 units
	Physical and chemical properties of textile fibers; yarn and fabric structure; current developments in the textiles field. Two class hours, six laboratory hours per week. Offered alternate years.	
	Prerequisite: TXTL 364; CHEM 102.	
	TXTL 552 Advanced Flat Pattern Design	2-4 units
	Prerequisite: TXTL 255 and consent of the instructor.	
	TXTL 558 Tailoring	4 units
	Application of tailoring techniques to women's coats and suits. Offered alternate years.	
	Prerequisite: TXTL 254 and consent of the instructor.	
	TXTL 565 Historical and Cultural Aspects of Clothing and Textiles	4 units
	Survey of influences on clothing, including sociological, psychological, historic, and economic factors. Development of textiles from ancient times among peoples of diverse cultures. Major focus on textiles and clothing from Western civilization.	



## DEPARTMENT OF ENGLISH

Chairman	ROBERT P. DUNN, Associate Professor of English PH.D. University of Wisconsin
Faculty	DOROTHY M. COMM, Professor of English PH.D. University of Alberta
	VICTOR S. GRIFFITHS, Professor of English PH.D. University of Nebraska
	RICHARD B. LEWIS, Emeritus Professor of English PH.D. Stanford University
	HELEN F. LITTLE, Emeritus Professor of English M.A. University of Nebraska
	GROSVENOR R. FATTIC, Associate Professor of English PH.D. Michigan State University
	LLEWELLYN E. FOLL, Associate Professor of English PH.D. Michigan State University
	MARILYN C. TEELE, Associate Professor of English M.ED. Boston University
	NANCY H. LECOURT, Assistant Professor of English M.A. Loma Linda University

**Objectives** The Department of English aims (1) to assist the general college student to understand and appreciate literary art and history and to organize his thoughts and writing effectively, and (2) to help the English major attain scholarship in literature, language, and composition adequate for graduate work, for teaching, or for other professions.

**Graduate programs** Programs leading to the Master of Arts degree in English are described in the BULLETIN of the Graduate School.

**Preparation for teaching** During his freshman or sophomore year, the student who plans to teach English on the secondary level should consult a credential adviser in the School of Education for detailed information concerning requirements.

A program leading to the Master of Arts degree in the teaching of English is described in the BULLETIN of the School of Education.

### BACCALAUREATE MAJOR PROGRAMS

**English** A student majoring in English completes the general requirements for the Bachelor of Arts degree (see *General Requirements*) and 54 units (36 upper division) in English courses, including ENGL 202; 4 units from ENGL 224, 225; ENGL 304 and



305; 4 units from ENGL 385, 475, or LING 305; 16 units from ENGL 434-438; 4 units from ENGL 457-459; ENGL 445, 465 and 2 units of ENGL 485. Cognate requirements are EDCI 437 in the School of Education; 8 units from HIST 207, 208, 209; HIST 307 or 308; a foreign language through level IV plus one upper-division reading course in the foreign language.

## Writing

This is an interdepartmental major offered by the Departments of English and Communication. A student majoring in writing completes the general requirements for the Bachelor of Arts degree (see *General Requirements*) and 60 units of courses with the following distribution: a total of 16 units in literature (including ENGL 202; 4 units from ENGL 224, 225; and 8 units from ENGL 354, 434-438, with 438 especially recommended); 8 units of media (chosen from CMME 226, 335, 344, and 436), 4 units of language (with a course chosen from ENGL 385, 475, LING 305, and SPPA 477); 32 units in writing (including ENGL 304, CMME 227; a minimum of 3 units from ENGL 305 or CMME 244; a minimum of 3 units from CMME 336, 337, 338, and 365; a minimum of 3 units from ENGL 305, 306, EPDM 481, 482); and 12-14 additional units selected from courses listed in the groups above *or* from the following: CMME 228, 329, 427, 434, 435, and 445. Cognate requirements are EDCI 437 in the School of Education; 8 units from HIST 207-209, and a foreign language through level IV. Consult the listings under the Department of Communication for the courses offered through that department.

## MINOR SEQUENCE

A minor in English is 30 units above the 200 level, including ENGL 202.

## COURSES

- |                |  |
|----------------|--|
| Remedial       | <p><b>RDNG 001 Reading Improvement I</b> <span style="float: right;"><b>4 units</b></span><br/>         For entering students with low scores on entrance or English Placement Test. Emphasizes study habits, comprehension skills, and vocabulary development. Individual laboratory practice. Does not apply toward a major in English or toward the general requirement in communication skills.</p> <p><b>RDNG 002 Reading Improvement II</b> <span style="float: right;"><b>4 units</b></span><br/>         Critical thinking and reading skills, with emphasis on vocabulary development and reading speed. Laboratory reading machines, pacers, and individualized materials. Does not apply toward a major in English or toward the general requirements in communication skills.</p> <p><b>ENGL 005 Introduction to Composition</b> <span style="float: right;"><b>4 units</b></span><br/>         Intensive review of grammar and usage, with considerable practice in the sentence, paragraph, summary, outline, and other minor forms. Does not apply toward a major in English or toward the general requirement in communication skills.<br/>         Prerequisite: Satisfactory performance on a placement examination.</p> |
| Lower division | <p><b>ENGL 101, 102 Freshman English</b> <span style="float: right;"><b>4, 4 units</b></span><br/>         Techniques and practice of expository and persuasive writing including an introduction to literary forms and types. Does not apply toward a major in English.<br/>         Prerequisite: Satisfactory performance on a placement examination.</p>   |

**ENGL 124 Freshman Seminar in Writing and Media Analysis 4 units**

Gives the well-prepared student an opportunity to read and evaluate more challenging material and write more sophisticated papers than is possible in ENGL 101, 102. Creative experimentation, student-initiated assignments, and student-directed class sessions. Students performing at grade level of B or better not required to take ENGL 102.

Prerequisite: Satisfactory performance on a placement examination and on additional diagnostic exercises.

Satisfactory completion of ENGL 102 or 124 or the equivalent is prerequisite to registration for courses numbered above 200.

**ENGL 201 Writing Laboratory 1-4 units**

Individual and/or group instruction on specific writing problems. A student may take the course voluntarily or by reference from a teacher only after completion of the freshman English requirement or the equivalent.

**ENGL 202 Introduction to Literature and Literary Analysis 4 units**

An introduction to major literary forms and to writing about literature.

**ENGL 224 American Literature to 1860 4 units**

**ENGL 225 American Literature 1860 to Present 4 units**

**ENGL 245 The Film as Art 4 units**

**ENGL 246 Literary Forms and Ideas 4 units**

Varied content from quarter to quarter, with specific areas listed in the class schedule. (Drama, the short story, contemporary literature, women in literature, American fiction, etc.) Offered primarily for general students, but applies toward a major in English. May be repeated with new content for additional credit.

**ENGL 247 Major Themes in Art and Literature 4 units**

An interdisciplinary study of an idea or theme (e.g., the dignity of man, war and peace, man and nature) as treated in literature, music, and the visual arts.

**ENGL 255 Religious Literature 4 units**

Upper division **ENGL 304 Advanced Composition: Prose 4 units**

**ENGL 305 Advanced Composition: Poetry 4 units**

**ENGL 306 Technical Writing 4 units**

Skills for informational writing needed in business, science, and industry; extensive practice in writing letters, proposals, descriptive and analytical reports, and research papers.

**ENGL 354 World Literature 4 units**

**ENGL 385 Modern Grammar 4 units**

Major descriptions of the grammar of modern English: traditional, structural, and transformational-generative, with special emphasis on transformational theory; application of grammatical principles to problems of style and dialect.

**ENGL 415 Literature for Children 4 units**

**ENGL 416 Literature for Adolescents 4 units**

**ENGL 425 Major American Authors or Movements 4 units**

**ENGL 434 Old and Middle English Literature 4 units**  
Offered alternate years.

**ENGL 435 English Renaissance Literature 4 units**  
Offered alternate years.

	ENGL 436 Restoration and Eighteenth-Century Literature Offered alternate years.	4 units
	ENGL 437 Nineteenth-Century English Literature Offered alternate years.	4 units
	ENGL 438 Twentieth-Century English Literature	4 units
	ENGL 445 Biblical Literature	4 units
	ENGL 457 Chaucer Offered alternate years.	4 units
	ENGL 458 Shakespeare Offered alternate years.	4 units
	ENGL 459 Milton Offered alternate years.	4 units
	ENGL 465 Literary Criticism: The Major Texts Offered alternate years.	4 units
	ENGL 475 History of the English Language Offered alternate years.	4 units
	ENGL 485 English Colloquium 2 units required of English majors.	1/2, 1/2, 1/2 unit
	ENGL 489 Religion and Literature Contributions of selected literary works to religious thought and experience. Limited to students majoring in English. Applies to general studies requirement in religion. Offered alternate years.	4 units
	ENGL 499 Directed Study	1-4 units
Graduate	ENGL 504 Methods and Materials of Literary Study	3 units
	ENGL 505 Practicum in Composition Required of teaching assistants.	2, 2 units
	ENGL 506 Composition and Rhetorical Theory	4 units
	ENGL 507 Diagnosis and Remediation in Reading	4 units
	ENGL 508 Practicum in Reading	2, 2 units
	ENGL 575 Problems in English Language and Linguistics	4 units
	ENGL 615 Literary History and Criticism	4-5 units
	ENGL 625 Seminar in a Major Literary Period	4-5 units
	ENGL 635 Seminar in a Major Author	4-5 units
	ENGL 645 Seminar in Religion and Literature	4-5 units
	ENGL 698 Thesis	4-8 units



## DEPARTMENT OF HISTORY and POLITICAL SCIENCE

Chairman	FREDERICK G. HOYT, Professor of History and Political Science PH.D. Claremont Graduate School
Faculty	WILFRED J. AIREY, Professor of History PH.D. University of Washington WALTER C. MACKETT, Professor of History PH.D. University of Southern California GARY M. ROSS, Professor of History PH.D. Washington State University PAUL J. LANDA, Associate Professor of Church History PH.D. Vanderbilt University DELMER G. ROSS, Associate Professor of History and Political Science PH.D. University of California, Santa Barbara JONATHAN M. BUTLER, Assistant Professor of Church History PH.D. University of Chicago
Collaborating faculty	GODFREY T. ANDERSON, Professor of American History PH.D. University of Chicago

The major in history, or history and political science, is recommended (1) for students who wish to prepare for secondary teaching, graduate study preparatory to college teaching, or the study of law; and (2) for students who seek a broad background in the liberal arts. The recommendations of the department adviser assist the student in selecting a program pattern that meets individual objectives. Students planning to attend graduate school are urged to develop foreign language competence.

Graduate program	A program leading to the Master of Arts degree in history is described in the BULLETIN of the Graduate School.
Preparation for teaching	A student preparing to teach history at the secondary level should plan to qualify for teaching credentials and during his freshman or sophomore year should consult the credentials adviser in the School of Education for detailed information concerning requirements. A program leading to the Master of Arts degree in the teaching of history is described in the BULLETIN of the School of Education.

### BACCALAUREATE MAJOR PROGRAMS

History	A student majoring in history completes the general requirements for the Bachelor of Arts degree (see <i>General Requirements</i> ) and 52 units (36 upper division) of
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coursework in history, including HIST 207, 208, 209, 265, a three quarter upper division sequence in American history (such as HIST 444, 445, 446; or 447, 448, 449); 24 additional upper division units distributed over four of seven areas: Europe to 1485, Europe since 1485, United States to 1865, United States since 1865, Far East, Latin America, Church history. A cognate requirement is a modern foreign language through level IV. Courses in political science, the behavioral sciences, and economics are recommended.

#### History and political science

A student majoring in history and political science completes the general requirements for the Bachelor of Arts degree (see *General Requirements*) and 60 units of coursework in history and political science, including HIST 207, 208, 209, 265; PLSC 204, 205, 206, 214, 215, 216; and 20 units of upper division coursework. Recommended: a modern foreign language through level IV; courses in the behavioral sciences and economics.

#### Western thought

A student majoring in Western thought completes the general requirements for the Bachelor of Arts degree (see *General Requirements*) and 72 units of coursework as follows: HIST 207, 208, 209, 435, 436, 437, 497, 506; PHIL 205, 207; PLSC 484, 485; RELH 445, 446, 447; 12 units selected from the following courses: EDFO 545 in the School of Education; ENGL 354; FREN 484; HIST 466 or 469; PHIL 208, 435; PHYS 305; SOCI 404; RELT 436. Completion of the program in interdisciplinary studies may be substituted for HIST 207, 208, 209. A cognate requirement is a modern foreign language through level IV.

#### Latin American studies

This major program meets the entire general requirement in the humanities.

A student majoring in Latin American studies completes the general requirements for the Bachelor of Arts degree (see *General Requirements*) and 56 units of coursework as follows: HIST 176, 177 (or equivalent), 354, 355; SPAN 315, 425, 476; PLSC 454; ANTH 334; 8 units from HIST 285, 428, 429; 8 units from SPAN 388, 427 or 429, 477; 4 units from ANTH 306, 309. A cognate requirement is Spanish through level IV. HIST 207, 208, 209 recommended.

### MINOR SEQUENCES

The following minors in history are available:

History, 28 units (12 upper division), including HIST 207, 208, 209, 265.

Political science, 32 units (8 upper division), including PLSC 204, 205, 206, 214, 215, 216.

Philosophy, 32 units, including PHIL 205, 207, 208; HIST 435, 436, 437; and 8 units from FREN 484; PHIL 435; PHYS 305; RELT 436.

*Note:* A student pursuing a major or minor in this department who does not place at the 50th percentile or above on the American History Placement Examination must also take HIST 156, 157 or 176, 177.

## HISTORY

- Lower division
- HIST 156, 157 Survey of American History and Institutions** 4, 4 units  
First quarter, to 1865; second quarter, since 1865. Fulfills the baccalaureate requirement in American history and the California teacher certification requirement, but does not apply toward a major or minor in the department. Credit not allowed for both 156 and 176, or for both 157 and 177.
- HIST 165 Issues in American History** 4 units  
Selected topics from the entire range of American history. Fulfills baccalaureate requirement in American history for students who qualify by a placement examination, but does not apply toward a major or minor in the department.
- HIST 176, 177 The Americas** 4, 4 units  
The Western Hemisphere. First quarter to 1820; second quarter since 1820. Fulfills baccalaureate requirement in American history and the California teaching credential. Credit not allowed for both 156 and 176, or for both 157 and 177.
- HIST 207 History of Western Civilization to 1300** 4 units  
Development of civilization, with emphasis on political, economic, religious, social, and cultural institutions.
- HIST 208 History of Western Civilization 1300-1815** 4 units
- HIST 209 History of Western Civilization Since 1815** 4 units
- HIST 265 Problems in American History** 4 units  
Detailed investigation of selected problems. For students majoring in the department, and for others with departmental consent.  
Prerequisite: HIST 156, 157 or equivalent.
- HIST 285 Problems in Hemispheric History** 4 units  
Detailed investigation of selected issues in the history of the Americas.  
Prerequisite: HIST 176, 177 or equivalent.
- Upper division
- HIST 307, 308 British Civilization** 4, 4 units  
First quarter, to 1815; second quarter, since 1815.
- HIST 354 Colonial Latin America** 4 units  
Latin America from the arrival of Columbus through the independence movements of the early nineteenth century, history of the Spanish and Portuguese empires in America. Conquest and colonization, political organization, race and society, the church, the economy, the Enlightenment, and various independence movements.
- HIST 355 Modern Latin America** 4 units  
Survey of Latin America from the nineteenth-century independence movements to the present, emphasizing events in the four principal nations of Latin America — Mexico, Brazil, Argentina, and Chile. Traces the traditional struggles of monarchists versus republicans and conservatives versus liberals as they evolved into modern revolutionary reform movements. Roles played by the church, the military, and other power groups.
- HIST 396 Oral History** 2 units  
Methods of oral history, interviewing, and oral history programs. Uses of oral history in teaching and writing history; techniques of gathering, preparing, and preserving oral history; field experience.
- HIST 404 History of Rome** 4 units  
Offered alternate years.
- HIST 414 The French Revolution** 4 units  
Offered alternate years.
- HIST 415 The Napoleonic Era** 4 units  
Offered alternate years.



<b>HIST 416 Europe 1815-1914</b>	<b>4 units</b>
Offered alternate years.	
<b>HIST 417 Europe 1914-1938</b>	<b>4 units</b>
Offered alternate years.	
<b>HIST 418 Europe since 1938</b>	<b>4 units</b>
Offered alternate years.	
<b>HIST 425, 426 History of Russia</b>	<b>4, 4 units</b>
First quarter, Czarist Russia 862-1917; second quarter, Communist Russia since 1917. Offered alternate years.	
<b>HIST 427 English Constitutional History</b>	<b>4 units</b>
<b>HIST 428 Mexico</b>	<b>4 units</b>
Mexico from the Spanish Conquest by Cortés through the twentieth-century Revolution. Offered alternate years.	
<b>HIST 429 Central America and the Caribbean</b>	<b>4 units</b>
Emphasizes the national history of the republics of Central America, Panama, and the Spanish-speaking nations of the Caribbean. Offered alternate years.	
<b>HIST 435, 436, 437 History of Ideas</b>	<b>4, 4, 4 units</b>
Themes in European philosophy viewed historically and contextually, with some attention to methodological problems. First quarter: Plato, Aristotle, Augustine, and Aquinas; second quarter: Kant, Hegel, Marx, Kierkegaard; third quarter: Sartre, Lévi-Strauss, James, and Wittgenstein. Offered alternate years.	
<b>HIST 444, 445, 446 American Diplomatic Relations</b>	<b>4, 4, 4 units</b>
First quarter, 1763-1865; second quarter, 1865-1939; third quarter, since 1939. Offered alternate years.	
<b>HIST 447, 448, 449 United States Constitution</b>	<b>4, 4, 4 units</b>
The federal constitution and its relation to American institutions. First quarter, to 1850; second quarter, 1850-1937; third quarter, since 1937. Offered alternate years.	
<b>HIST 454 American Colonial History</b>	<b>4 units</b>
Offered alternate years.	
<b>HIST 455 Religion in American Life</b>	<b>3-4 units</b>
Offered alternate years.	
<b>HIST 456 Civil War and Reconstruction</b>	<b>4 units</b>
Offered alternate years.	
<b>HIST 458 Western America</b>	<b>4 units</b>
Offered alternate years.	
<b>HIST 459 California History</b>	<b>4 units</b>
Offered alternate years.	
<b>HIST 464, 465 Asia in World Affairs</b>	<b>4, 4 units</b>
Reciprocal influences of Europeans, Americans, and Asians. First quarter, from the age of discovery to the eve of World War II; second quarter, since World War II. Offered alternate years.	
<b>HIST 466 The Early Christian Church</b>	<b>3-4 units</b>
Study from primary sources of the important men, developments, and ideas in the Christian Church from apostolic times through the fifth century. Offered alternate years.	
<b>HIST 467 The Medieval Church</b>	<b>3-4 units</b>
Study from primary sources of the important men, developments, and ideas in the Christian Church from the sixth through the fifteenth centuries. Offered alternate years.	

- HIST 468 History of the Papacy** **3-4 units**  
 Historical and theological development of the Papacy and Roman Catholicism during the patristic, medieval, and modern periods. Offered alternate years.
- HIST 469 The Age of the Renaissance** **3-4 units**  
 A topical approach to the European Renaissance of the fourteenth, fifteenth, and early sixteenth centuries, with analytical probes into Renaissance society, politics, philosophy, religion, and the fine arts. Offered alternate years.
- HIST 474 The Lutheran Reformation** **3-4 units**  
 A study of Martin Luther, his theology, and the Reformation movement he initiated down to 1555. Offered alternate years.
- HIST 476 The Swiss Reformation and Calvinism** **3-4 units**  
 Leading men of the Swiss Reformation (Zwingli, Bullinger, Calvin, and Beza) and the theological and sociological influences of Calvinism. Offered alternate years.
- HIST 478 The English Reformation** **3-4 units**  
 Main historical forces and religious movements within the English Reformation until the Westminster Assembly. Offered alternate years.
- HIST 484 Twentieth Century Church History** **3-4 units**  
 Modern religious trends and their impact upon church and society. Offered alternate years.
- HIST 485 History of Seventh-day Adventism** **3-4 units**  
 The important individuals and issues in the Adventist movement from 1844 to 1922.
- HIST 486 Ellen G. White: Her Life and Thought** **3-4 units**  
 A study of the key events in the life of Ellen G. White (1827-1915) and her major theological contributions.
- HIST 487 Natural Theology: A Historical Survey** **3-4 units**  
 A historical survey, beginning with the Middle Ages, of different approaches to the question of faith and reason, or what can be known of God by rational inquiry alone, within Christian thought.
- HIST 488 Protestant Thought in the Twentieth Century** **3-4 units**  
 An examination of the major figures, issues, and resources of contemporary Protestant theology.
- HIST 489 The Religious Aspects of History** **4 units**  
 Philosophy of history, with emphasis on religious aspects and applications. Required for a major in the department; limited to seniors majoring in history. Does not apply toward a major or minor.
- HIST 494 History Colloquium** **4 units**  
 May be repeated with new content for additional credit.
- HIST 495 Readings in History** **1-6 units**  
 Limited to history majors with a 3.0 minimum grade point average in the major. Special study in fields specified by the instructor; regular weekly conferences. May be repeated in different areas for additional credit to a maximum of 12 units.  
 Prerequisite: Consent of the department chairman.
- HIST 497 Proseminar** **4 units**

	HIST 499 Directed Study	1-6 units
	Prerequisite: Consent of the department chairman.	
	RELH 445, 446, 447 The Christian Heritage	4, 4, 4 units
Graduate	HIST 504 Research Methods in History	4 units
	HIST 506 Historiography	4 units
	HIST 507 American Historical Literature	4 units
	HIST 544 The Emergence of the American Constitutional System	4 units
	HIST 545 United States in the Far East Since 1900	4 units
	HIST 564 Concepts of Diplomacy	4 units
	HIST 566 The Early Christian Church	4 units
	HIST 567 The Medieval Church	4 units
	HIST 568 History of the Papacy	4 units
	HIST 569 The Age of the Renaissance	4 units
	HIST 574 The Lutheran Reformation	4 units
	HIST 576 The Swiss Reformation and Calvinism	4 units
	HIST 578 The English Reformation	4 units
	HIST 584 Twentieth-Century Church History	4 units
	HIST 585 History of Seventh-day Adventism	4 units
	HIST 586 Ellen G. White: Her Life and Thought	4 units
	HIST 587 Natural Theology: A Historical Survey	4 units
	HIST 588 Protestant Thought in the Twentieth Century	4 units
	HIST 634 Seminar in European History	4 units
	HIST 635 Seminar in Church History	4 units
	HIST 645 Seminar: The Coming of the Civil War	4 units
	HIST 647 Seminar in American History	4 units
	HIST 655 Seminar in Latin America	4 units
	HIST 694 Special Problems in History	arranged
	HIST 697 Research	4 units
	HIST 698 Thesis	2 units



## POLITICAL SCIENCE

Lower division	PLSC 204, 205, 206	American Government: National, State, Local	4, 4, 4 units
	Structure and functions of the government of the United States. Offered alternate years.		
	PLSC 214, 215, 216	Comparative Government	4, 4, 4 units
	Background, constitutional organization, and activities of the governments of England, France, Germany, China, Russia, and Mexico. Offered alternate years.		
	PLSC 255	Introduction to Law	2 units
	Orientation to the study of law. Taught by a practicing attorney, assisted by colleagues.		
Upper division	HIST 447, 448, 449	United States Constitution	4, 4, 4 units
	HIST 464, 465	Asia in World Affairs	4, 4 units
	PLSC 335, 336, 337	Problems in International Relations	4, 4, 4 units
	A score or more of the major problems facing the international community with emphasis on the relation of the United States thereto. Basically a discussion format. Offered alternate years.		
	PLSC 454	Inter-American Relations	4 units
	Relations between the United States and the nations of Latin America and the relations of Latin American nations among themselves. The development of U.S. foreign policy with regard to Latin America, the growth of the Western Hemisphere concept, and the creation and function of the Organization of American States and other regional bodies.		
	PLSC 484	Introduction to Political Theory	4 units
	Main currents of political thought from Plato to the present. Offered alternate years.		
	PLSC 485	American Political Thought	4 units
	American political ideas from the colonial period to the present. Offered alternate years.		
	PLSC 494	Workshop in Politics	4 units
	Consideration of practical political problems during an election year. Offered alternate years.		
	PLSC 495	Readings in Political Science	1-6 units
	Limited to history and political science majors with a 3.0 minimum grade point average in the major. Special study in fields specified by the instructor; regular weekly conferences.		
	Prerequisite: Consent of the department chairman.		
	PLSC 499	Directed Study	1-6 units
	Prerequisite: Consent of the department chairman.		



## DEPARTMENT OF INDUSTRIAL STUDIES

- Chairman MELVIN G. HOLM, Associate Professor of Industrial Studies  
ED.D. University of Missouri
- Faculty DONALD G. BOWER, Professor of Industrial Studies  
ED.D. University of California, Los Angeles
- ARTHUR M. WALLS, Assistant Professor of Industrial Studies  
M.A. California State University, Long Beach
- AUBREY F. KINZER, Instructor in Aviation  
B.S.C.E. Virginia Polytechnic Institute
- NEAL G. STEVENS, Instructor in Industrial Studies  
B.A. Loma Linda University
- Lecturers CLIFTON G. GENT, Lecturer in Aviation
- MERLE D. MORSE, Lecturer in Automotive Technology  
B.A. Loma Linda University
- VERNON L. VON POHLE, Lecturer in Architectural Engineering  
B.A. Pacific Union College

**Objectives** Programs of the Department of Industrial Studies are designed for students who desire (1) to enter careers in automotive mechanics, aviation, metal machines, wood construction, drafting, welding, photography, and maintenance; (2) to gain knowledge of and proficiencies in these operations and preparation essential for employment in occupational trades, management, and administrative purposes; and (3) to prepare for the teaching of industrial studies.

**Preparation for teaching** A student preparing to teach industrial studies includes in his major program INDS 394, 484, 489; 24 units in at least one industrial content area in which he will demonstrate job-entry proficiency; 4 units in each of five additional content areas; EDCI 439 in the School of Education. In addition he should plan to qualify for industrial arts credentials and during his freshman or sophomore year should consult the credentials adviser in the School of Education for detailed information concerning requirements.

### BACCALAUREATE MAJOR PROGRAMS

**Industrial studies** A student majoring in industrial studies completes the general requirements for the Bachelor of Arts degree or Bachelor of Science degree (see *General Requirements*) and 60 units of coursework selected in consultation with the department adviser.

**Industrial arts** A student majoring in industrial arts completes the general requirements for either the Bachelor of Arts degree or the Bachelor of Science degree (see *General Requirements*) and 60 units in trade-content areas as outlined in "preparation for teaching" above.

Specialization      Students may specialize in technical trade areas as listed above under "objectives" of the Department of Industrial Studies by completing general and departmental requirements.

A program including photography is also offered through the Department of Art.

## MINOR SEQUENCE

A minor in industrial studies is 32 units (14 upper division) of coursework selected in consultation with the department adviser.

## ASSOCIATE DEGREE PROGRAM

Institutional plant engineering      A student in the associate degree program in institutional plant engineering completes the general requirements for the Associate in Science degree (see *General Requirements*) and 52 units of coursework selected in consultation with the department adviser.

## AUTOMOTIVE TECHNOLOGY

Lower division	<b>AUTO 134 Automotive Care</b>	<b>2 or 4 units</b>
	Theory, detection, and minor repair procedures in electrical, fuel, cooling, lubrication, and brake systems. Maintenance and body care. Does not apply toward a major in industrial studies.	
	<b>AUTO 234 Automotive Engine Rebuilding</b>	<b>4 units</b>
	Theory and function of automotive engines; rebuilding procedures.	
	<b>AUTO 235 Automotive Air Conditioning</b>	<b>4 units</b>
	Theory, function, and service of automotive refrigeration systems.	
Upper division	<b>AUTO 334 Automotive Tune-up and Analysis</b>	<b>4 units</b>
	Theory, function, and service of automotive fuel, ignition, cooling, and emission systems. May be repeated for additional credit.	
	<b>AUTO 335 Automotive Electrical Systems</b>	<b>4 units</b>
	Theory, function, and service of automotive electrical components. May be repeated for additional credit.	
	<b>AUTO 336 Automobile Chassis</b>	<b>4 units</b>
	Design theory, unit function, and repair procedures of front-end alignment, suspension, and brake systems. May be repeated for additional credit.	
	<b>AUTO 337 Automotive Transmission and Power Train</b>	<b>4 units</b>
	Theory, function, and service of automotive automatic and manual transmissions, torque converters, clutch assemblies, drive shafts, differentials, and rear axle assemblies. May be repeated for additional credit.	
	<b>AUTO 338 Automotive Body Repair</b>	<b>4 units</b>
	Techniques and practice of automotive body rebuilding and refinishing. May be repeated for additional credit.	



## AVIATION

These courses prepare students to pass Federal Aviation Administration written and flight examinations. There are specific prerequisites for flight courses.

The student contracts for the required flight training at his own expense. He meets regularly with the department aviation coordinator and receives a grade when the flight experience requirements have been met.

Lower division	AVIA 104	Private Pilot Ground School	4 units
	AVIA 105	Private Pilot Flight Training	2 units
	AVIA 204	Commercial Pilot Ground School	4 units
	AVIA 205	Commercial Pilot Flight Training	4 units
	AVIA 206	Multi-Engine Flight Training	1 unit
Upper division	AVIA 304	Instrument Pilot Ground School	4 units
	AVIA 305	Instrument Pilot Flight Training	2 units
	AVIA 404	Certified Flight Instructor Ground School	4 units
	AVIA 405	Certified Flight Instructor Flight Training	2 units
	AVIA 406	Certified Flight Instructor Instrument Ground School	4 units
	AVIA 407	Certified Flight Instructor Instrument Flight Training	2 units
	AVIA 408	Airline Transport Pilot Ground School	4 units
	AVIA 409	Airline Transport Pilot Flight Training	2 units

## CONSTRUCTION AND MAINTENANCE

Lower division	CNST 181	Carpentry I	4 units
		Details of construction through actual practice. Work on house or other building constructed to architectural plans.	
	CNST 182	Carpentry II	4 units
		Continuation of Carpentry I. Types of exterior finish applications; interior finish including door installations, staircases, kitchen and other installed cabinets, interior trim, floors, etc. May be repeated for additional credit.	
	CNST 184	Residence Electrical Wiring	4 units
		Theory and practice in light construction electrical installations under building codes.	
	CNST 185	Residence Plumbing	4 units
		Theory and practice of plumbing systems installation under building codes.	
	CNST 186	Mechanical Equipment of Buildings	4 units
		Maintenance theory and practice for plumbing, electrical, heating, and air conditioning systems in relation to safety rules.	
	INDS 283	Practical Solar Energy	2-4 units
		Theory and construction of solar apparatus.	

	<b>INDS 288 Plant Maintenance Management</b>	<b>4 units</b>
	Maintenance supervision; personnel organization; relationships with business, purchasing, and administrative personnel.	
Upper division	<b>INDS 384 Machine Tool Maintenance</b>	<b>2-4 units</b>
	Study and practical experience in care and repair of industrial shop equipment. Areas of study selected with adviser. May be repeated for additional credit.	

## DRAFTING

Lower division	<b>DRFT 141 Technical Drawing</b>	<b>4 units</b>
	Technical language of industry. Skills and knowledge in graphic methods of shape and size description used in technical planning, documenting, and distributing within the production industries.	
	<b>DRFT 142 Advanced Technical Drawing</b>	<b>4 units</b>
	Translating and communicating engineering design. Layout procedures and conventions used in the production of working drawings. May be repeated for additional credit.	
	<b>DRFT 244 House Planning</b>	<b>4 units</b>
	Architectural design problems in function, aesthetics, and comparative consumer costs. Drafting references, conventional symbols, and standards used in preparing residence plans for building trades. May be repeated for additional credit.	
	<b>DRFT 245 Orientation to Engineering</b>	<b>4 units</b>
	An introduction to a creative profession.	
Upper division	<b>DRFT 344 Advanced Architecture</b>	<b>4 units</b>
	Project planning methodology, and drafting for construction systems in use in residence and public buildings. May be repeated for additional credit.	
	<b>DRFT 345 Engineering Graphics</b>	<b>4 units</b>
	Geometric applications, survey illustrations, project planning. May be repeated for additional credit.	
	<b>DRFT 346 Structural Drafting</b>	<b>4 units</b>
	Application of structural data, references, and codes in planning usable details and project drawings of typical structures. May be repeated for additional credit.	

## PHOTOGRAPHY

Lower division	<b>PHTO 224 Basic Photography</b>	<b>4 units</b>
	Black and white photography. Includes history, theory, and practice. Using cameras, light meters, and laboratory equipment.	
Upper division	<b>PHTO 324 Advanced Photography</b>	<b>4 units</b>
	Expansion of techniques established in basic photography. Principles of photo design and their application. Theory of natural and artificial light.	
	<b>PHTO 325 Color Photography</b>	<b>4 units</b>
	Nature and properties of color. Laboratory skills in producing color slides, negatives, color prints, and cibachrome. Special effects with color. May be repeated for additional credit.	
	<b>PHTO 326 New Directions in Photography</b>	<b>4 units</b>
	Brings the creative photographer up to date with contemporary styles and photographic procedure. A point of departure from which students take on new viewpoints.	

**PHTO 424 Experimental Photography** **4 units**  
 Skills in technical processes. Techniques in the Sabbatier effect, tone-line, solarization, high contrast, and other material and chemical modifications. Individual guidance and evaluation. May be repeated for additional credit.

**PHTO 425 Applied Photography** **4 units**  
 A cross section of the technical problems facing the professional photographer. Theory and application of the view-camera, lenses, studio lighting, and advanced darkroom procedure. Individual guidance and evaluation. May be repeated for additional credit.

## METAL CONSTRUCTION

**Lower division** **INDS 264 Metal Machines I** **4 units**  
 Basic skills in engine lathe, drill press, and common hand tools (drills, reamers, taps and dies, files, etc.), measuring instruments, and layout. Shop drawings.

**Upper division** **INDS 364 Metal Machines II** **4 units**  
 Advanced processes of turning, milling, and hand work, together with operations involving shaping, grinding, finishing, gear calculating, and cutting. Problems in fixtures. Emphasis on close-tolerance work. May be repeated for additional credit.

**INDS 365 Dental Materials** **4 units**  
 Technical methods and practice with dental materials. Applications of casting, carving processes, machining and hand tooling techniques. Evaluation of design, surface quality, fits and finishes. Emphasis on tolerance and dimension control.

## WELDING

**Lower division** **INDS 171 Oxyacetylene Welding** **4 units**  
 Operation and technical data. May be repeated for additional credit.

**INDS 172 Electrical Welding** **4 units**  
 Operation and technical data. May be repeated for additional credit.  
 Prerequisite: INDS 171.

**Upper division** **INDS 374 Advanced Welding** **4 units**  
 Proficiencies in TIG, MIG, Arc, and oxyacetylene welding. May be repeated for additional credit.

## WOOD AND PLASTIC CONSTRUCTION

**Lower division** **INDS 254 Furniture Construction I** **4 units**  
 Materials and processes. Emphasis on quality construction and buying. Student selected project. Open to both men and women. May be repeated for additional credit.

**INDS 255 Woodturning** **2 units**  
 The wood lathe and its use. Cutting tool design, sharpening, and use. Student-selected spindle and face plate projects. May be repeated for additional credit.

**INDS 256 Basic Plastics** **4 units**  
 Materials and processes in modern industrial plastics.

**Upper division** **INDS 354 Furniture Construction II** **4 units**  
 Continuation of INDS 254, with emphasis on industrial practices. Fieldwork. Teacher-specified testing projects. May be repeated for additional credit.



- INDS 356 Upholstery I** **4 units**  
Basic reupholstering techniques and selection of materials to complete commercial and household furniture. May be repeated for additional credit.
- INDS 357 Upholstery II** **4 units**  
Installation processes in use on major furniture items and selected materials. May be repeated for additional credit.
- INDS 454 Finishing Methods and Materials** **4 units**  
Industrial finishing methods; wood, metal, plastics, and fabrics.
- INDS 455 Materials Testing and Evaluation** **4 units**  
Lubricants, fasteners, glues, abrasives, finishes. Nondestructive and destructive tests. Specific student-selected projects. May be repeated for additional credit.

## PROFESSIONAL STUDIES

- Upper division**
- INDS 387 Problems in Industrial Arts** **1-4 units**  
Problems selected in consultation with department chairman. Research problems, supervisory experience for prospective teachers or tradesmen.
- INDS 394 Shop Planning and Organization** **4 units**  
Principles of planning laboratories for industrial work. Equipment selection, acquisition, positioning, and maintenance.
- INDS 484 History of Industry** **4 units**  
Origins and progress of trade and technical work in the United States. Organization, objectives, and scope of employment preparation today.
- INDS 485 Occupational Orientation and Vocational Counselor Training** **4 units**  
Analysis of entry-level job requirements, job description, references, and employment data. Principles of personnel placement and employee classification.
- INDS 489 Industrial Philosophy** **4 units**  
Foundations of vocational philosophy; the relation of Adventism to the contemporary world of work; the role of industrial educators. Does not apply toward a major or minor.
- INDS 498 Project in Industrial Production** **2-4 units**  
Selected project representing an area of concentration in the major field to demonstrate the best effort of a senior. May be repeated for additional credit. Retention of completed work for temporary or permanent exhibition at the discretion of the department.
- INDS 499 Directed Study** **2-4 units**
- Graduate**
- INDS 584 Curriculum Construction in Industrial Studies** **4 units**
- INDS 595 Industrial Studies Seminar** **2-4 units**  
May be repeated for additional credit.

## DEPARTMENT OF MATHEMATICS

Chairman	GEOFFREY T. JONES, Associate Professor of Mathematics PH.D. University of California, Los Angeles
Faculty	HILMER W. BESEL, Associate Professor of Mathematics M.A. University of Nebraska VERNON W. HOWE, Associate Professor of Mathematics PH.D. Dartmouth College CARLYLE D. FLEMMING, Assistant Professor of Mathematics M.A. Andrews University BARRY G. GRAHAM, Assistant Professor of Mathematics PH.D. University of California, Riverside
Lecturer	DAVID R. DICKERSON, Lecturer in Mathematics M.A. Loma Linda University

Objectives The department provides a curriculum in mathematics and computer science as a cultural study for all liberal arts students, as a basic tool for the scientist, and as a preparation for graduate study and for teaching.

Preparation for teaching A student preparing to teach mathematics at the secondary level should plan to qualify for teaching credentials, and during his freshman or sophomore year he should consult the credentials adviser in the School of Education for detailed information concerning requirements.

### BACCALAUREATE MAJOR PROGRAMS

- Mathematics A student majoring in mathematics completes either of the following programs:
- Program A consists of the general requirements for the Bachelor of Arts degree (see *General Requirements*) and 54 units of coursework including CPTG 225; MATH 131, 132, 133, 231, 232, 233, 325, 345, 415, 451; and 8 units of coursework chosen from upper division computing or mathematics; and 2 units of MATH 485. Cognate requirements are PHYS 211 and 4 units of additional related coursework selected in consultation with the department adviser.
- Program B consists of the general requirements for the Bachelor of Science degree (see *General Requirements*) and 58 units of coursework including CPTG 225; MATH 131, 132, 133, 231, 232, 233, 324 or 325, 421, 431, 432; and 12 units selected from upper division computing or mathematics; and 2 units of MATH 485. Cognate requirements are PHYS 211 and 12 units of additional related coursework selected in consultation with the department adviser. (MATH 345 and either MATH 325 or 422, 415, 451, should be taken if Program B will be presented to the Commission for Teacher Preparation and Licensing of the State of California.)

- Biomathematics**      A student majoring in biomathematics completes the general requirements for the Bachelor of Science degree (see *General Requirements*) and 73 units of coursework; 32 units in mathematics: CPTG 225; MATH 131, 132, 133, 231, 232, 233, 464; 20 units in biology: BIOL 101, 102, 103, 404, 447; 20 units from upper division mathematics or biology, including 4 units of biology and excluding MATH 489 and BIOL 489. Cognate requirements are CHEM 111, 112, 113, 371, 372, 373; PHYS 211.
- Computing**      A student majoring in computing completes the general requirements for the Bachelor of Science degree (see *General Requirements*) and a core of 52 units of coursework including: ACCT 201, 202, 203; CPTG 204, 225, 314, 324, 325, 334, 341, 342; MATH 121, 499 — computing project internship, 4 units, together with one of the following patterns:
- Business: MATH 265; ACCT 314 or 301, 302; ECON 255; BUAD 341, 342, 355, 356, 381, 424, 454.
- Mathematics: MATH 131, 132, 133, 231, 232, 233; CPTG 354; and 8 units chosen from MATH 324, 361, 362, 451, 452. Cognate requirements are PHYS 211, 212, 256, 355.

## MINOR SEQUENCES

The following minors in mathematics are available:

Mathematics, 28 units, including MATH 131, 132, 133, 231, 232, 233.

Computing, 32 units, including CPTG 225, 324, 325; MATH 121, 361; 8 units of upper division CPTG courses; 8 units of additional coursework selected with departmental approval.

## COMPUTING

- |                |   |
|----------------|---|
| Lower division | <p><b>CPTG 204 Computer Concepts</b> <span style="float: right;"><b>4 units</b></span><br/>         Conceptual basis of computer operations, logic, applications to business problems.<br/>         Prerequisite: Fulfillment of the general studies requirement in computational skills.</p> <p><b>CPTG 225 Computer Programming</b> <span style="float: right;"><b>4 units</b></span><br/>         The BASIC-PLUS language, techniques in the analysis of problems, design of efficient programs.<br/>         Prerequisite: MATH 104 or consent of instructor.</p> |
| Upper division | <p><b>CPTG 314 Management of the Computer Functions</b> <span style="float: right;"><b>4 units</b></span><br/>         The application of management techniques to the data processing department in an organization. Emphasis is on equipment configuration, contract negotiation, cost containment techniques, and software evaluation.<br/>         Prerequisite: CPTG 225 or equivalent.</p>  |



- CPTG 324 Programming Languages** 4 units  
The study and implementation of high-level languages, including COBOL, FORTRAN, and PL/I; structured approach.  
Prerequisite: CPTG 225 or equivalent.
- CPTG 325 Advanced Programming** 4 units  
Binary number system, 1's and 2's complements, automatized signed arithmetic, double precision, complex numbers; character encodings, computer arithmetic, round-off, bias, overflow, accuracy; string storage and manipulation; recursion, graph theory, vectors, trees; polish notation, machine language, subroutines, parameter passing by value, by reference and by call name; indirect addressing; external procedure, type matching, stacks, chains; examples from FORTRAN and PL/I.  
Prerequisite: CPTG 225; MATH 121 or consent of instructor.
- CPTG 334 Systems Analysis** 4 units  
Approaches to the analysis and design of management and information systems.  
Prerequisite: MATH 265; CPTG 314 or 324; or consent of instructor.
- CPTG 341, 342 Computing Theory I, II** 4, 4 units  
Mathematical description of the logical organization at the complete computer level, as well as several layers of sub-levels; systems design, peripheral interfacing, data-bus management, memory management; operating systems, batch and time-sharing and real-time systems; component technologies.  
Prerequisite: CPTG 325 or consent of instructor.
- CPTG 354 Compiler Theory** 4 units  
Syntax and semantics, class of meta-languages and derivations, top-down and bottom-up parsing techniques, error detection and diagnostics, tables, push-pop uses, code generation, interpreters.  
Prerequisite: CPTG 325.

## MATHEMATICS

- Remedial** **MATH 005 Basic Mathematics** 4 units  
Arithmetic: decimals, fractions, percentages, applied problems. Does not apply toward any mathematics program, or toward the general requirements in natural sciences, mathematics, and health. Open only to students who have scored below the 50th percentile in both the SAT quantitative test (or equivalent) and the mathematics placement examination.
- MATH 006 Arithmetic and Algebra** 4 units  
Review of arithmetic and elementary algebra. This course will emphasize problem solving using algebra. This course is an alternative to MATH 005. Does not apply toward any mathematics program, or toward the general requirements in natural sciences, mathematics and health. Open only to students who have scored below the 50th percentile in both the SAT quantitative test (or equivalent) and the mathematics placement examination, and who have taken high school algebra I or equivalent.
- Lower division** **MATH 104 Intermediate Algebra** 4 units  
Techniques for handling polynomial and rational expressions, solutions of equations, exponents and logarithms, the quadratic equation, graphs. The scope of the course includes high school algebra I. Does not apply toward any mathematics program.
- MATH 121 College Algebra** 4 units  
Manipulation techniques for polynomial, rational, exponential and radical expressions. Properties of the exponential and logarithmic functions. Solution of systems of equations and inequalities. Complex numbers, theory of equations, curve sketching, combinatorics, sequences and series, finite induction. Introduction to trigonometry. Does not apply toward any mathematics program.  
Prerequisite: MATH 104 or secondary school equivalent.

**MATH 122 Trigonometry and Geometry** 4 units  
Standard trigonometric identities, sine and cosine rules, two- and three-dimensional applications, complex numbers, De Moivre's theorem,  $n$ -th roots of unity. Equations of straight lines and conics; identification of conics and their basic geometrical properties. Does not apply toward any mathematics program.

Prerequisite: MATH 121 or consent of instructor.

**MATH 131, 132, 133 Calculus I, II, III** 4, 4, 4 units  
Derivatives of elementary functions and applications; the Riemann integral, techniques of integration and applications, infinite series, Taylor's series, simple differential equations; vector algebra, multivariable calculus, maxima and minima, applications. MATH 131, 132, satisfies the calculus requirements for the School of Medicine.

Prerequisite: For MATH 131: MATH 121 or secondary school equivalent. For MATH 132: MATH 122 or secondary school equivalent.

**MATH 225 Concepts of Mathematics** 4 units  
Set algebra; natural, integer, and rational number systems. Topics from elementary logic, number theory, geometry, and computer programming. Does not apply toward any mathematics program.

Prerequisite: MATH 104 or secondary school equivalent.

**MATH 231, 232, 233 Mathematical Methods I, II, III** 4, 4, 4 units  
Matrix algebra, eigenvalues, introduction to vector spaces, infinite series, elementary functions of a complex variable; vector analysis, the integral theorems; ordinary differential equations, operator methods, variation of parameter, series solutions, introduction to numerical methods, Fourier series.

Prerequisite: MATH 133 or consent of instructor.

**MATH 251, 252 Introduction to Statistics I, II** 4, 4 units  
Summation notation, descriptive statistics, probability, the normal distribution, testing hypothesis about the mean, linear correlation and regression, one-way analysis of variance, multiple regression, estimation, chi-square tests, nonparametric statistics. Does not apply toward any mathematics program.

Prerequisite: MATH 104 or secondary school equivalent.

**MATH 265 Finite Mathematics** 4 units  
Introduction to combinatorics, probability, expected value, matrix algebra and applications, linear programming, the simplex method; applications using the computer. Does not apply toward any mathematics program, except the major in computing.

Prerequisite: MATH 104 or secondary school equivalent.

**MATH 299 Directed Study** 1-4 units  
May be repeated for additional credit with consent of instructor.

Upper division **MATH 324 Linear Algebra** 4 units  
Vector spaces, linear transformations, matrices and determinants, eigenvalues and eigenvectors, canonical forms.

Prerequisite: MATH 233 or consent of instructor.

**MATH 325 Survey of Abstract Algebra** 4 units  
A study of vector spaces, groups, rings and fields arising out of algebras associated with integers and with polynomials in one variable.

Prerequisite: MATH 233 or consent of instructor.

**MATH 335 Complex Variables** 4 units  
Complex numbers, analytic functions, Cauchy's theorem, contour integration, residues, conformal mapping.

Prerequisite: MATH 233 or consent of instructor.

**MATH 345 College Geometry** 4 units  
Elementary and modern plane Euclidean geometry. Topics chosen from non-Euclidean geometry, foundations of geometry.

Prerequisite: MATH 233 or consent of instructor.

**MATH 361, 362 Numerical Methods I, II** 4, 4 units  
Interpolation and approximation, numerical differentiation and integration; solution of non-linear equations, systems of equations, eigenvalues, numerical solutions to differential equations, error analysis.

Prerequisite: MATH 225 and 233 or consent of instructor.

**MATH 364 Differential Equations** 4 units  
Existence and uniqueness theorems; Laplace transforms, systems of differential equations, numerical techniques; introduction to partial differential equations.

Prerequisite: MATH 233 or consent of instructor.

**MATH 415 Sets and Number Systems** 4 units  
Introduction to informal axiomatic set theory; systematic development of the natural, integer, rational, and real number systems; topological properties of the real line.

Prerequisite: MATH 233 or consent of instructor.

**MATH 421, 422 Abstract Algebra I, II** 4, 4 units  
Groups, quotient groups, rings, unique factorization domains, fields, field extensions; unsolvability of certain geometrical constructions.

Prerequisite: MATH 324 or MATH 325 or consent of instructor.

**MATH 431, 432 Analysis I, II** 4, 4 units  
The topology of the real line, metric spaces, uniform convergence and continuity, the derivative, the Riemann integral, outer measure.

Prerequisite: MATH 233 or consent of instructor.

**MATH 451, 452 Mathematical Statistics I, II** 4, 4 units  
Probability, random variables, moment generating functions, special distributions; large and small sample methods, theoretical frequency distributions; sampling theory, correlation and regression, testing goodness-of-fit, principles of estimation, hypothesis testing, nonparametric methods.

Prerequisite: MATH 231 or consent of instructor.

**MATH 464 Biomathematical Modeling** 4 units  
Mathematical modeling of problems in the life sciences, including both deterministic and probabilistic models; computer simulations. Physiological and population problems will be studied.

Prerequisite: MATH 233 and BIOL 103 or consent of instructor.

**MATH 485 Mathematics Seminar** 1/2-2 units  
Informal seminars dealing with topics chosen from areas of pure or applied mathematics or computer science, and which are not usually covered in regular mathematics courses. May be repeated with new content for additional credit.

Prerequisite: MATH 133 or consent of instructor.

**MATH 489 Christianity and the Rational Man** 4 units  
Man's response to God's will, structures of belief in religion and science. Does not apply toward a major or minor in mathematics. Identical to PHYS 489.

Prerequisite: Consent of instructor.

**MATH 499 Directed Study** 1-4 units  
The study of topics or problems not covered in courses currently being taught. Limited to majors in the department. May be repeated for additional credit.

Prerequisite: Consent of chairman.

**Graduate MATH 521, 522 History of Mathematics** 4, 4 units  
A systematic study of the evolution of important mathematical ideas from ancient times to the twentieth century. Emphasis will be placed on studying problems which have been influential in promoting mathematical development.

Prerequisite: Senior standing or consent of instructor.

**MATH 599 Directed Study** 1-4 units

Prerequisite: Consent of chairman.



## DEPARTMENT OF MODERN LANGUAGES

- Chairman    **MARGARETE A. HILTS**, Professor of French  
                     PH.D. Case Western Reserve University
- Faculty     **JACQUES BENZAKEIN**, Associate Professor of French  
                     M.A. University of Wisconsin
- ERNESTINA F. GARBUTT-PARRALES**, Assistant Professor of Modern Languages  
                     PH.D. University of Southern California
- RUTH E. BURKE**, Instructor in German and Comparative Literature  
                     M.A. University of California, Riverside
- JUAN R. VELEZ**, Instructor in Spanish  
                     M.A. University of California, Riverside

**Objectives**    The broad objectives of language study are to gain the insights into national thought, communication, and culture that should concern every educated person; to acquire foreign language facility for purposes of travel or residence abroad; and to meet the language requirements for advanced degrees in other fields.

The specific objectives of a major in language are (1) to attain the skills and develop the scholarship essential for teaching and for graduate study and (2) to prepare for entrance to business and trade, civil service, dentistry, law, library science, medicine, and other professions requiring verbal skills and background in thought.

**Adventist Colleges Abroad**    In cooperation with Adventist Colleges Abroad, the department offers to both the student majoring in language and the general college student the privilege of study in Europe without losing credits or lengthening the course of study. By carefully planning his program with the department and his major professor, the student may earn full credit for study at any of the overseas schools listed under Adventist Colleges Abroad in this BULLETIN.

Students enter this program for three quarters (nine months) beginning in September. To be eligible, the student must be admitted to the College of Arts and Sciences and have the endorsement of the Department of Modern Languages.

Although enrolled overseas, students are registered at this University, are considered in residence, and are eligible for scholarships, loans, and grants offered by the University. Credit earned is recorded each quarter in the Office of the Registrar.

**Independent study**    A student who wishes to study on location a language not offered by the department but needed for his major concentration may present to the department a request for independent language study, accompanied by a detailed study plan and specific objectives as worked out by the student and his adviser. This arrangement is limited to students who have previously studied a language and who have demonstrated ability for independent study.

## Preparation for teaching

A student preparing to teach a modern foreign language at the elementary or secondary level should plan to qualify for teaching credentials and during his freshman or sophomore year should consult the credentials adviser in the School of Education for detailed information concerning requirements. The student who wishes to receive the approval of the department for EDCI 457 in the School of Education must take LING 445.

Programs leading to Master of Arts degrees in the teaching of French, German, and Spanish are described in the BULLETIN of the School of Education.

## BACCALAUREATE MAJOR PROGRAMS

### English as a second language

An interdisciplinary program designed for students preparing to teach English to non-English speakers, this program consists of the general requirements for the Bachelor of Arts degree (see *General Requirements*) and 52 units (40 upper division) of coursework, exclusive of courses numbered 101, 102; one modern language through level IV or its equivalent; ANTH 104, 306; ENGL 304, 385, 425, 475; LING 305, 495; SOCI 307; SPPA 477; 4 units in the literature/civilization/culture of an area in which the student wants to work in English as a second language; LING 445 or EDCI 440 in the School of Education.

### French

A student majoring in French spends at least one academic year in a French-speaking environment and the department recommends an additional quarter in the summer (preferably following the year abroad) for sociological/cultural research. Two programs in French are currently available:

Program A, designed for students preparing for elementary or secondary teaching, consists of the general requirements for the Bachelor of Arts degree (see *General Requirements*) and 48 units of upper division coursework in French, including FREN 304 or 305, 306, 307, 425, 426. Cognate requirements are European history, 4 units; history of art or music, 4 units; LING 305; and LING 445 or EDCI 440 in the School of Education. A second language through level IV is recommended.

Program B, designed for students preparing for graduate studies in French, consists of the general requirements for the Bachelor of Arts degree (see *General Requirements*) and 48 units of upper division coursework in French, including FREN 306, 307, 425, 426, and six additional courses in French literature. Cognate requirements are European history, 4 units; history of art or music, 4 units.

### German

A student majoring in German completes the general requirements for the Bachelor of Arts degree (see *General Requirements*) and 44 units of upper division coursework in German and linguistics, including GRMN 405, 427; LING 305. Cognate requirements are literature other than German, 4 units. Additional courses in linguistics and a second foreign language are recommended. Students preparing for elementary or secondary teaching take LING 445 or EDCI 440 in the School of Education.

### Spanish

Students who are not proficient in Spanish should study for at least one quarter in a Spanish-speaking country. Three programs in Spanish are available:

Program A, a diversified bilingual/crosscultural major for students preparing for elementary bilingual teaching, requires 28-36 units in each of the following four areas: English and speech, mathematics and physical or life sciences, social sciences, humanities, with a major concentration in Spanish. The program consists of the general requirements for the Bachelor of Arts degree (see *General Requirements*) and 126 units of coursework in Spanish and other disciplines, including ANTH 104, 334; BIOL 107; ENGL 304, 385, 415; HIST 156, 157; MATH 225, 251; MUED 105; PHYS 304, 305; PSYC 104; SOCI 307; SPAN 304, 305, 307, 409, 424, 427, 429, 474; one course from SPAN 477, 484, 486, 487; LING 305.

Program B, designed for students preparing for secondary bilingual or Spanish teaching, consists of the general requirements for the Bachelor of Arts degree (see *General Requirements*), 36-69 units of professional education courses (see School of Education BULLETIN) including LING 445 or EDCI 440, and 44 units of upper division coursework in Spanish, including SPAN 304, 305, 307, 315, 409, 424, 425 or 427, one literature course each from the 300 and 400 levels, and LING 305. A second language through level IV is recommended.

Program C, designed for students preparing for graduate studies, consists of the general requirements for the Bachelor of Arts degree (see *General Requirements*) and 44 units of upper division coursework in Spanish, including SPAN 304, 305, 315, 425, and five additional courses in Spanish literature. A second language through level IV and as much additional coursework in Spanish as possible are recommended.

## MINOR SEQUENCES

The following minors are available:

French, 28 units, including FREN 201, 202.

German, 28 units, including GRMN 201, 202.

Spanish, 28 units, including SPAN 201, 202, 304, 305.

Linguistics, 28 units (presupposing a foreign language through level IV) including LING 305, 495; electives selected from the following courses: ANTH 306; SPPA 277; SPCH 315, 326; ENGL 385, 475; FREN 306; GRMN 405; PSYC 477; SPAN 304, 305.

## GENERAL

Lower division	MDLG 101 Selected Language	1-4 units
	CHIN 101, 102 Chinese I, II	4 units
	Language, civilization, culture. Individualized instruction. Conversation and laboratory periods as needed.	
	CHIN 201, 202 Chinese III, IV	4, 4 units
	Conversation and composition. Conversation and laboratory periods as needed.	



	JAPN 101, 102 Japanese I, II	4, 4 units
	Language, civilization, culture. Individualized instruction. Conversation and laboratory periods as needed.	
	JAPN 201 Japanese III	4 units
	Conversation and composition. Conversation and laboratory periods as needed.	
	RUSS 101, 102 Russian I, II	4, 4 units
	Language, civilization, culture. Individualized instruction. Conversation and laboratory periods as needed.	
	RUSS 201, 202 Russian III, IV	4, 4 units
	Conversation and composition. Conversation and laboratory periods as needed.	
Upper division	RUSS 335 Russian Culture and Literature	4 units
	JAPN 425 Japanese Culture and Civilization	4 units
	MDLG 429 Paris, Crossroad of the Western World	4 units
	MDLG 437 Masterpieces of Literature	4 units
	May be repeated with new content for additional credit.	
	MDLG 475 Romanticism and the Arts	4 units
	Interdepartmental approach to the Romantic Movement and its manifestation in literature and the arts.	
	MDLG 485 The Avant-Garde	4 units
	Interdepartmental approach to the avant-garde in literature and the arts.	
	MDLG 489 God and Western Literature	4 units
	Does not apply toward a major or minor.	

## ENGLISH AS A SECOND LANGUAGE

	ENSL 101, 102, 103 English as a Second Language	4, 4, 4 units
	Structure of the language, with stress on vocabulary building, pronunciation, reading, and writing. Vocabulary slanted toward everyday activities. Practice sessions as needed.	
	ENSL 201, 202, 203 English as a Second Language	4, 4, 4 units
	Continuation of ENSL 103.	

## FRENCH

Prerequisite for courses numbered above 300: FREN 202 or equivalent.

Introductory courses	FREN 101, 102 French I, II	4, 4 units
	Language, civilization, culture. Individualized instruction. Conversation and laboratory periods as needed.	
	FREN 201, 202 French III, IV	4, 4 units
	Conversation and composition. Conversation and laboratory periods as needed.	

Language and culture	FREN 304	Conversation	4 units
	FREN 305	Advanced Conversation	2 units
	May be repeated for additional credit.		
	FREN 306	Grammar and Composition	4 units
	FREN 307	Analysis and Criticism	4 units
	FREN 425	Culture and Civilization	4 units
	FREN 426	The French Community	4 units
	FREN 427	Sociological/Cultural Research	4 units
Literature	FREN 347, 348, 349	Literary Currents I, II, III	4, 4, 4 units
	First quarter: Middle Ages and the Renaissance. Second quarter: classicism and Enlightenment. Third quarter: Romanticism and Contemporary.		
	FREN 456	The Theater: Tragedy	4 units
	FREN 457	The Theater: Comedy	4 units
	FREN 458	Themes in French Literature	4 units
	FREN 459	Major Literary/Cultural Figure(s)	4 units
	FREN 464	Poetry	4 units
	FREN 475	The Novel	4 units
	FREN 476	<i>Héros et Anti-héros</i>	4 units
	From Roland to Ubu.		
	FREN 478	<i>The Philosophes</i>	4 units
	Montaigne, Descartes, Pascal, Diderot, Montesquieu, Voltaire, Rousseau.		
	FREN 484	Existentialism	4 units
Graduate	From Kierkegaard to Sartre, Camus, and Marcel.		
	FREN 485	Literature of French-Speaking Africa	4 units
	FREN 499	Directed Study	1-4 units
	FREN 504	History of the French Language	4 units
	FREN 514	Structure and Style	4 units
	May be repeated for additional credit.		
	FREN 599	Special Studies	2-4 units

## GERMAN

Prerequisite for courses numbered above 300: GRMN 202 or equivalent.

Introductory courses	GRMN 101, 102	German I, II	4, 4 units
	Grammar and pronunciation; reading of simple prose; conversation and laboratory drill.		
	GRMN 201, 202	German III, IV	4, 4 units
	Review of grammar, with emphasis on idioms. Reading of German prose to furnish a background of life, culture, and geographical aspects of Germany.		
	Prerequisite: GRMN 102 or equivalent.		

Language and culture	GRMN 304	Practical German Conversation	4 units
		Correct use of vernacular conversation based on everyday life and events. Brief review of grammar.	
	GRMN 305	Readings in the Sciences and Humanities	4 units
		To acquaint the student with the achievements of some outstanding Germans. Recommended for students wishing to acquire the reading knowledge expected of graduate students.	
	GRMN 405	Advanced Grammar and Composition	4 units
	GRMN 427	German Culture and Civilization	4 units
Literature	GRMN 345	Outline History of German Literature	4 units
		Main currents of German literature. Selections from works of representative authors.	
	GRMN 454	Classicism	4 units
		Works of Goethe, Schiller, and their contemporaries. Individual reports in German or in English.	
	GRMN 465	Enlightenment and <i>Sturm und Drang</i>	4 units
		Lessing as representative of the Enlightenment; the early works of Goethe and Schiller.	
	GRMN 474	Romanticism	4 units
		German romanticism; its chief exponents.	
	GRMN 475	Realism	4 units
		German authors from 1830 to 1890.	
	GRMN 484	Contemporary Literature	4 units
	GRMN 487	Genre Studies	4 units
	GRMN 499	Directed Study	1-4 units
Graduate	GRMN 504	History of the German Language	4 units
	GRMN 588	Proseminar in German Literature	4 units
	GRMN 599	Special Studies	2-4 units

## SPANISH

Prerequisite for courses numbered above 300: SPAN 202 or equivalent.

Introductory courses	SPAN 101, 102	Spanish I, II	4, 4 units
	SPAN 201, 202	Spanish III, IV	4, 4 units
	SPAN 211, 212	Spanish for the Professional	4, 4 units
Language and culture	SPAN 304	Advanced Grammar I: Phonetics and Morphology	4 units
	SPAN 305	Advanced Grammar II: Syntax and Stylistics	4 units
	SPAN 307	Reading, Composition, Orthography	4 units
	SPAN 409	Contrastive Analysis of Spanish and English	4 units
	SPAN 424	Bilingualism and Biculturalism in Education	4 units



	SPAN 425	Hispanic Culture	4 units
	SPAN 427	Mexican-American Folklore and Culture	4 units
	SPAN 429	Chicanos of the Southwest	4 units
Literature	SPAN 315	Analysis and Criticism	4 units
	SPAN 346	Medieval and Renaissance Literature	4 units
	SPAN 355	Baroque and Eighteenth Century Literature	4 units
	SPAN 366	Survey of Nineteenth Century Literature	4 units
	SPAN 367	Latin American Literature	4 units
	SPAN 474	Spanish and Latin American Literature for Children	4 units
	SPAN 477	The Generation of '98	4 units
	SPAN 484	Modern Theater and Poetry	4 units
	SPAN 486	The Latin American Essay	4 units
	SPAN 487	The Contemporary Novel	4 units
	SPAN 499	Directed Study	1-4 units
Graduate	SPAN 504	History of the Spanish Language	4 units
	From Vulgar Latin to modern Spanish, with particular emphasis on the phonology and morphology of Spanish Romance.		
	SPAN 525	Seminar in Spanish Literary Criticism	4 units
	Reading of scholarly works illustrating critical methods and techniques of literary analysis. Prerequisite: SPAN 315.		
	SPAN 599	Special Studies	2-4 units

## LINGUISTICS

	LING 305	Introduction to Linguistics	4 units
	An introduction to linguistic science, including a brief survey of historical and comparative linguistics, and the fundamentals of structural and transformational grammar.		
	LING 445	Language Colloquium	4 units
	Required of teaching majors.		
	SPPA 477	Psycholinguistics	4 units
	LING 495	Readings in Linguistics	2-4 units
	LING 599	Special Studies	2-4 units

## DEPARTMENT OF MUSIC

Chairman H. ALLEN CRAW, Professor of Music  
PH.D. University of Southern California

Faculty PERRY W. BEACH, Professor of Music  
PH.D. Eastman School of Music

ANITA N. OLSEN, Associate Professor of Music  
Licentiate Royal Academy of Music  
Licentiate Trinity College of Music (London)

JOANN R. ROBBINS, Associate Professor of Music  
D.M.A. University of Southern California

DONALD J. VAUGHN, Associate Professor of Music  
M.MUS. University of Redlands

DONALD W. THURBER, Assistant Professor of Music  
PH.D. North Texas State University

ROBERT C. UTHE, Assistant Professor of Music  
M.MUS. University of Montana

Visiting faculty HERBERT BLOMSTEDT, Visiting Professor of Music  
Diplomate Royal Academy of Music (Stockholm)  
SIR DAVID V. WILLCOCKS, Visiting Professor of Music  
M.A. Cambridge University

Objectives The objectives of this department are to help the student gain an understanding and an appreciation of the musical heritage of man; to provide leisure time cultural and artistic activities, such as group music experiences and intelligent listening; to aid the student in acquiring the knowledge, techniques, and skills necessary for performers, composers, church musicians, and teachers.

Preparation for teaching A student preparing to teach music at the elementary or secondary level should plan to qualify for teaching credentials, and during his freshman or sophomore year he should consult the credentials adviser in the School of Education for detailed information concerning requirements. A student planning to teach is advised to complete the program in music education.

A program leading to the Master of Arts degree in the teaching of music is described in the BULLETIN of the School of Education.

## COURSES IN APPLIED MUSIC

Regular registration is required of students for applied music studies whether for credit or for audit. Courses in applied music may be repeated for credit by reregistration for the same course number. Enrollment in courses may be limited.

Individual instruction	Individual instruction in piano, organ, voice, violin, orchestral or band instruments, and conducting is offered with or without credit. Credit is earned as follows: (a) a minimum of nine half-hour lessons per quarter with five practice hours a week for each hour of credit; (b) participation in public recitals as specified by the instructor; (c) successful completion of a final examination.
Class instruction	Class instruction may be offered in voice, piano, violin, as necessary in lieu of individual instruction.
Group music	Group music courses may be repeated to a maximum of 12 units and must be taken each quarter by a student majoring in music, except as indicated for the specific degree. A student who registers for credit in a music organization is expected to be in the organization for the entire school year.
Limitation of credit	(a) Credit in excess of 6 units of individual instruction courses must be supplemented by an equal number of units in theoretical studies; (b) eligibility for upper division credit is determined by the music faculty; (c) the consent of the instructor must be secured before the student performs in public.
Applicability to major programs	<p>For students majoring in music, the following conditions apply:</p> <ol style="list-style-type: none"><li>1. Individual music instruction must be under the direction of the music faculty.</li><li>2. Individual instruction in the major field (voice, instrument) should be taken each year of residence, and the student must attain proficiency in one field.</li><li>3. Admission to upper division individual instruction courses is granted pending the successful completion of an audition before the music faculty.</li><li>4. A transfer student must take a minimum of 6 units of individual instruction courses in his primary field at this University.</li><li>5. All majors, regardless of their concentration, must pass the piano proficiency test. Details concerning this requirement may be obtained from the chairman of the department.</li><li>6. It is recommended that all students majoring in music with a voice emphasis take SPCH 315.</li><li>7. Candidates for the Bachelor of Music degree are required to present senior recitals as indicated in the various concentrations; these should demonstrate a high level of proficiency.</li><li>8. Attendance is required at a specified percentage of Department of Music programs as well as at certain concerts offcampus.</li></ol>



## BACCALAUREATE MAJOR PROGRAMS

- Music** A student majoring in music completes the general requirements for the Bachelor of Arts degree (see *General Requirements*) and 67 units (30 upper division) of coursework in music, including MUCT 111, 112, 113, 211, 212, 213, 314, 315; MUHL 205, 335, 336, 337; MURE 485 or 486; a minimum of 6 units in applied music (200 level or above); 9 units of organizations. Cognate requirements are PHIL 435; PHYS 204.
- Music education** A student majoring in music education completes the general requirements for the Bachelor of Music degree (see *General Requirements*) and 89-91 units in music, including MUCT 111, 112, 113, 211, 212, 213, 314 or 411, 315, 415; MUED 305; MUPF 316, 317; MUHL 205; two courses from MUHL 335, 336, 337. Also included are 12 units of applied music, 10 of which are in one field (6 units 300 level or above); 11 units of organizations; 10 units of piano, voice and instrument classes, including MUPF 241, 242, 251, 252, 261, 262, 268, 328. Students with primary emphasis in piano are advised to take MUPF 325. Cognate requirements are PHIL 435 and PHYS 204. Additional music courses are recommended as electives.
- Performance** A student majoring in performance completes the general requirements for the Bachelor of Music degree (see *General Requirements*) and 108-114 units in music, including MUCT 111, 112, 113, 211, 212, 213, 314, 315; MUHL 205, 335, 336, 337; MUPF 316, 317, 398, 498 (a full senior recital plus one-half junior recital). Also included are 24 units (10 units 400 level) of performance in the primary field, 8 units in one secondary field. Cognate requirements are PHIL 435 and PHYS 204. One of four patterns in performance may be followed:
- A student emphasizing piano takes MUCT 411, 415; MUHL 324; MUPF 225, 325; one unit from MUPF 277-286 or 377-386; 9 units of organizations.
- A student emphasizing organ takes MUCT 411, 415; MUHL 326; MUPF 328 (2 units); 12 units of organizations.
- A student emphasizing an instrument other than piano or organ takes MUCT 411, 415; MUPF 328 (2 units); 12 units of organizations.
- A student emphasizing voice takes MUHL 327; MUPF 328 (4 units); MURE 487; 12 units of choral organizations. A cognate requirement is French or German through level IV.
- Church music** A student majoring in church music completes the general requirements for the Bachelor of Music degree (see *General Requirements*) and 110-112 units in music, including MUCT 111, 112, 113, 211, 212, 213, 314, 315; MUHL 205, 326, 335, 336, 337; MUPF 316, 317, 328, 498 (two public recitals: one in the primary emphasis; the other in the primary emphasis, the secondary emphasis, or a combination of both); MURE 485, 486, 487. Also included are 16 units (6 units 300 level or above) of performance in the primary field (organ, voice, or conducting); 12 units (3 units 300 level or above in either organ or voice if the primary emphasis is conducting) divided between the two fields not chosen for primary emphasis; 12 units of choral organizations. Cognate requirements are PHIL 435 and PHYS 204. Recommended courses are RELH 445 or 446 or 447.

## MINOR SEQUENCE

A minor in music is 30 units (12 upper division), including MUCT 111, 112, 113; MUHL 335, 336, 337.

## MUSIC COMPOSITION AND THEORY

Lower division	<b>MUCT 105 Music Fundamentals</b>	<b>3 units</b>
	Rudiments of music, dictation, sight-singing, and ear-training. Primarily for students without previous music education. Does not apply toward a major in music.	
	<b>MUCT 111, 112, 113 Theory I</b>	<b>4, 4, 4 units</b>
	Fundamentals of musicianship, including four-voice writing of triads, diatonic modulation, nonharmonic tones. Emphasis on correlated ear-training and keyboard harmony. Must be taken in sequence.	
	Prerequisite: MUCT 105 or equivalent.	
Upper division	<b>MUCT 211, 212, 213 Theory II</b>	<b>4, 4, 4 units</b>
	First quarter: completes the study of four-voice writing, including the writing of an original chorale. Continued emphasis on ear-training and keyboard harmony. Second quarter: eighteenth century counterpoint, including the chorale prelude, invention, fugue, canon. Third quarter: styles, comparative study of classic, romantic, impressionistic, and twentieth century composers. Must be taken in sequence.	
	Prerequisite: MUCT 111, 112, 113.	
	<b>MUCT 314 Counterpoint</b>	<b>4 units</b>
	Sixteenth century polyphony, with practice in the stylistic writing of two-part and three-part vocal music.	
	<b>MUCT 315 Music Form</b>	<b>4 units</b>
	Smaller forms, through the sonata, the rondo, and the contrapuntal forms.	
	<b>MUCT 411, 412 Composition</b>	<b>4, 4 units</b>
	Practice in writing original compositions in the smaller forms. Emphasis on twentieth century compositional techniques. May be repeated for additional credit.	
	Prerequisite: MUCT 213 and consent of the instructor.	
	<b>MUCT 415 Orchestration</b>	<b>4 units</b>
	Instruments of the orchestra; arranging music for small ensembles and orchestra.	
	<b>MUCT 499 Directed Study</b>	<b>1-4 units</b>
	Prerequisite: MUCT 213.	

## MUSIC EDUCATION

Upper division	<b>MUED 305 Music in the Elementary School</b>	<b>4 units</b>
	Rote and note singing; music listening; concepts of melody, rhythm, harmony.	
	<b>MUED 499 Directed Study</b>	<b>1-4 units</b>
	<b>EDCI 445 Curriculum and Instruction: Music</b>	<b>4 units</b>
	Objectives, methods, materials, and problems involved in teaching music in the secondary school.	

## MUSIC HISTORY AND LITERATURE

Lower division	<b>MUHL 205 Introduction to Music</b>	<b>4 units</b>
	Basic music literature, with some attention to other arts.	
Upper division	<b>MUHL 324 Performance Repertoire: Piano</b>	<b>4 units</b>
	The various periods of piano literature: styles, interpretations, and development of the instrument. Attendance at designated concerts in Riverside and Los Angeles. Requires two quarters. Alternate years.	
	<b>MUHL 326 The Organ and Service Playing</b>	<b>2 units</b>
	Organ and organ literature; problems and techniques of hymn playing, modulation, improvisation, accompaniment of choir and soloists; music selection. Alternate years.	
	<b>MUHL 327 Performance Repertoire: Voice</b>	<b>4 units</b>
	Solo literature from the lute air to twentieth century art song, including examples from Italian, German, French, Russian, Scandinavian, and English repertoire. Requires two quarters. Alternate years.	
	<b>MUHL 335, 336, 337 History of Music</b>	<b>4, 4, 4 units</b>
	First quarter: earliest times through 1600. Second quarter: 1600-1800. Third quarter: 1800 to present.	
	Prerequisite: MUCT 105 or equivalent.	
	<b>MUHL 435 Advanced History of Music</b>	<b>4 units</b>
	A different period selected each year: Renaissance, baroque era, classical era, romantic era, and twentieth century. May be repeated for additional credit.	
	Prerequisite: MUHL 335, 336, 337.	
	<b>MUHL 499 Directed Study</b>	<b>1-4 units</b>
Graduate	<b>MUHL 645 Seminar in the History of Music</b>	<b>4 units</b>

## MUSIC PERFORMANCE

Lower division	<b>MUPF 225 Accompanying</b>	<b>2 units</b>
	Principles of and practice in accompanying both vocal and instrumental music. An additional unit may be earned by accompanying a senior recital. Alternate years.	
	Prerequisite: Consent of the instructor.	
Upper division	<b>MUPF 316 Choral Conducting</b>	<b>2 units</b>
	Conducting and rehearsal techniques, diction, tone, selection of repertoire, stylistic interpretation, score preparation, and management and organization of a choral department. Open to juniors and seniors only.	
	<b>MUPF 317 Instrumental Conducting</b>	<b>2 units</b>
	Conducting and rehearsal techniques, score reading, instrumentation, style patterns. Open to juniors and seniors only.	
	<b>MUPF 325 Performance Techniques: Piano</b>	<b>4 units</b>
	General principles of piano teaching methods: development of the hand, phrasing, fingering, pedaling, scales and arpeggios, studies and repertoire, ornaments, musical terms and signs. Requires two quarters. Alternate years.	
	<b>MUPF 328 Performance Techniques: Voice</b>	<b>2 or 4 units</b>
	Fundamental concepts of vocal technique; vocal repertoire appropriate for the developing singer. For voice emphasis students, instruction in analytic and diagnostic skills used in teaching, 4 units. For others, who serve as demonstration models, basic training in singing, 2 units. Requires two quarters. Offered alternate years.	



Class instruction	<b>MUPF 241, 242 Stringed Instruments</b>	<b>1, 1 units</b>
	Basic techniques of the orchestral stringed instruments. Taught 1979-80.	
	<b>MUPF 251, 252 Woodwind Instruments</b>	<b>1, 1 units</b>
	Orchestral woodwind instruments. Taught 1978-79.	
	<b>MUPF 261, 262 Brass and Percussion Instruments</b>	<b>1, 1 units</b>
	Orchestral brass and percussion instruments. Taught 1980-81.	
	<b>MUPF 265 Voice Class</b>	<b>1 unit</b>
	Beginning voice taught by the class method. May be repeated for additional credit.	
	<b>MUPF 268 Basic Piano</b>	<b>2 units</b>
	Functional piano for music students lacking in piano background. May be repeated for additional credit.	

## APPLIED MUSIC STUDIES

Individual instruction Attendance may be required at occasional class sessions. Credit at the 100 level does not apply toward a major or minor in music.

MUPF 144, 244, 344, 444	Brass	1-2 units per quarter
MUPF 145, 245, 345, 445	Organ	1-2 units per quarter
MUPF 146, 246, 346, 446	Percussion	1-2 units per quarter
MUPF 147, 247, 347, 447	Piano	1-2 units per quarter
MUPF 148, 248, 348, 448	Strings	1-2 units per quarter
MUPF 149, 249, 349, 449	Voice	1-2 units per quarter
MUPF 154, 254, 354, 454	Woodwind	1-2 units per quarter
MUPF 155, 255, 355, 455	Harpsichord	1-2 units per quarter
MUPF 156, 256, 356, 456	Guitar	1-2 units per quarter
MUPF 398, 498	Recital in Music	1, 1 units
MUPF 417	Advanced Conducting	2 units per quarter
	Prerequisite: MUPF 316 and 317.	

Group music Membership in University music groups is open to qualified students with the consent of the instructor.

MUPF 274, 374	Concert Band	1 unit per quarter
	Some college-owned instruments available each quarter.	
MUPF 275, 375	Collegiate Choir	1 unit per quarter
MUPF 276, 376	Concert Orchestra	1 unit per quarter
MUPF 277, 377	University Singers	1 unit per quarter
MUPF 278, 378	Chamber Orchestra	1 unit per quarter
MUPF 284, 384	String Quartet	1 unit per quarter
	Prerequisite: Consent of the department chairman.	

- MUPF 285, 385 Piano Ensemble** 1 unit per quarter  
Prerequisite: Consent of the department chairman.
- MUPF 286, 386 Wind and Percussion Ensemble** 1 unit per quarter  
Prerequisite: Consent of the department chairman.
- MUPF 287, 387 Male Chorus** 1 unit per quarter  
Prerequisite: Consent of the department chairman.
- MUPF 369, 669 Seminar in Applied Music** 1-4, 1-4 units  
May be repeated for additional credit.

## RELIGIOUS MUSIC

- MURE 485 Church Music** 4 units  
Vocal and instrumental music of the Church from the sixteenth century to the present.
- MURE 486 Hymnology** 4 units  
Christian hymnody from the Reformation to the present; examination of current hymnals, including modern trends.
- MURE 487 Sacred Choral Literature** 4 units  
Development of choral singing within the Christian church; literature of all periods; building of repertoire; styles and performance techniques demonstrated in a collegium musicum setting.
- MURE 489 Music and Worship** 4 units  
Nature of worship; music as an aid to worship; the role of choir, organist, director; congregational participation; music for youth and children; relation between church musicians and ministerial staff. Does not apply toward a major or minor.
- MURE 499 Directed Study** 1-4 units
- MURE 685 Seminar in Church Music** 4 units



## DEPARTMENT OF PHYSICAL EDUCATION, HEALTH, and RECREATION

Chairman	WALTER S. HAMERSLOUGH, Associate Professor of Physical Education ED.D. University of Oregon
Faculty	EUGENE W. NASH, Associate Professor of Physical Education M.M. University of Southern California M.P.H. Loma Linda University ROBERT K. SCHNEIDER, Associate Professor of Physical Education M.A. Loma Linda University NELSON E. THOMAS, Associate Professor of Physical Education PH.D. Florida State University HELEN I. WEISMEYER, Associate Professor of Physical Education M.S. University of Southern California L. JANENE TURNER, Assistant Professor of Physical Education M.A. San Diego State University
Collaborating faculty	WILLIAM T. JARVIS, Associate Professor of Preventive and Community Dentistry, School of Dentistry PH.D. University of Oregon
Lecturer	ERVIN H. MATEER, Lecturer in Physical Education B.A. Loma Linda University MYRLE E. RICH, Lecturer in Physical Education

**Functions** The Department of Physical Education, Health, and Recreation has the following functions: instruction in a variety of physical activities; supervision of the Bill Dopp Equestrian Center, recreation and intramural activities program; and the preparation of health educators, teachers, and recreational leaders.

**Preparation for teaching** A student preparing to teach physical education at the elementary or secondary level should plan to qualify for teaching credentials, and during his freshman or sophomore year he should consult the credentials adviser in the School of Education for detailed information concerning requirements.

### BACCALAUREATE MAJOR PROGRAMS

**Physical education** A student majoring in physical education completes the general requirements for either the Bachelor of Arts or the Bachelor of Science degree (see *General Requirements*) and 63 units of coursework in physical education, including PEAC 108, 109, 181, 244-257, 274-278; PETH 204, 214, 216, 264, 265, 266, 355, 356, 357, 385, 408, 424, 426, 427, 429, 444, 483. Cognate requirements are BIOL 111, 112 or 131, 132; EDCI 450 in the School of Education.



- Physical education and health A student majoring in physical education and health completes the general requirements for either the Bachelor of Arts or the Bachelor of Science degree (see *General Requirements*) and 67 units of coursework in physical education, including PEAC 108, 109, 181, 244-257; PETH 204, 214, 216, 264, 265, 266, 355, 356, 357, 385, 408, 414, 415, 416, 424, 426, 427, 429, 444, 483. Cognate requirements are BIOL 111, 112 or 131, 132; FDNT 225; EDCI 450 in the School of Education.
- Recreation A student majoring in recreation completes the general requirements for either the Bachelor of Arts or the Bachelor of Science degree (see *General Requirements*) and 36 units of coursework in recreation including PEAC 244-257 (2 units), 274-278 (2 units), PETH 204, 235, 334, 385, 408, 438, 439, 483. Additional coursework totaling 24 units is selected from one of the following options:
- General Recreation: PEAC 108, 109 (required); ART 204, BUAD 356; MUCT 105, 305; PSYC 304, 455; SOSR 104; SPCH 204.
- Equestrian Recreation: PEAC 123-128 (1 unit); PETH 361, 362 (recommended) 364, 365 (required); AGRI 105, 205, 234, 334; BUAD 356.
- Therapeutic Recreation: PETH 437 (required); PSYC 304, 324, 344, 425, 464, 465, 466, SOSR 104.
- Outdoor Recreation: BIOL 101, 102, 103, 414, 424, 465, 469, 475, 485; PHYS 304.
- Health science A student majoring in health science completes the general requirements for the Bachelor of Science degree (see *General Requirements*) and 74 units of coursework, including BIOL 101, 111, 112, 185, 427; CHEM 101, 102, 103; FDNT 225; PETH 214, 216, 314, 414, 415, 416, 417, 426, 429, 444; PSYC 324; SOCI 307.
- Public health Students interested in a program emphasizing biostatistics, environmental health, health service administration, or health education in a medical and public health context should consult the BULLETIN of the School of Allied Health Professions for details of the undergraduate program in public health science offered on the Loma Linda campus.

## MINOR SEQUENCES

Minors of 30 units (15 upper division) selected in consultation with the department adviser are available in the following areas:

Physical education  
Physical education and health  
Recreation  
Health science  
Youth services

## ASSOCIATE DEGREE PROGRAM

- Recreation A student in the associate degree program in recreation completes the general requirements for the Associate in Science degree (see *General Requirements*) and 39

units of coursework including PEAC 123-126 (any 2 courses), 133, 177, 244-257, 274-278; PETH 204, 214, 235, 264-266, 334, 438. Cognate requirements are MUCT 105 or MUED 305; ART 204, 264.

## COURSES

Lower division

### PEAC 101-199 Physical Education Activity

1/2-1 unit per quarter

Motor skills and physiological development; adaptive programs as needed. Up to 12 courses applicable toward a baccalaureate degree. Does not apply toward a major in physical education.

PEAC 101	Swimming I	PEAC 147	Field Hockey
PEAC 102	Swimming II	PEAC 148	Men's Flagball
PEAC 103	Swimming III	PEAC 149	Track and Field
PEAC 104	Synchronized Swimming I	PEAC 150	Men's Soccer
PEAC 105	Synchronized Swimming II	PEAC 154	Men's Softball
PEAC 106	Scuba Diving I	PEAC 155	Women's Softball
PEAC 107	Scuba Diving II	PEAC 157	Women's Flagball
PEAC 108	Lifesaving	PEAC 158	Women's Soccer
PEAC 109	Water Safety	PEAC 159	Water Polo
PEAC 110	Independent Activities	PEAC 161	Badminton I
PEAC 111	Fitness and Figure Control	PEAC 162	Badminton II
PEAC 112	Weight Training	PEAC 163	Diving I
PEAC 113	Jogging	PEAC 164	Diving II
PEAC 114	Adaptive Activities	PEAC 165	Tennis I
PEAC 116	Gymnastics I	PEAC 166	Tennis II
PEAC 117	Gymnastics II	PEAC 167	Tennis III
PEAC 118	Gymnastics III	PEAC 169	Racquetball I
PEAC 119	Gymkhana	PEAC 170	Racquetball II
PEAC 120	Physical Fitness Appraisal	PEAC 171	Golf I
PEAC 121	Archery	PEAC 172	Golf II
PEAC 123	Horsemanship Western Style I	PEAC 173	Golf III
PEAC 124	Horsemanship Western Style II	PEAC 177	Backpacking
PEAC 125	Horsemanship Western Style III	PEAC 178	Winter Backpacking
PEAC 126	Horsemanship English Style I	PEAC 179	Rock Climbing
PEAC 127	Horsemanship English Style II	PEAC 181	Movement Skills
PEAC 128	Horsemanship English Style III	PEAC 182	Self-Test Tumbling
PEAC 130	Skiing I	PEAC 183	Aerobic Rhythms
PEAC 131	Skiing II	PEAC 184	Aerobic Conditioning
PEAC 133	Singing Games	PEAC 185	Cross Country
PEAC 134	Skating	PEAC 191	Judo I
PEAC 135	Sailing	PEAC 192	Judo II
PEAC 138	Cycling	PEAC 194	Self-Defense I
PEAC 140	Volleyball I	PEAC 195	Self-Defense II
PEAC 141	Volleyball II	PEAC 197	Karate I
PEAC 144	Baseball	PEAC 198	Karate II
PEAC 145	Men's Basketball	PEAC 199	Karate III
PEAC 146	Women's Basketball		

**PETH 204 Introduction to Physical Education, Health, and Recreation** **2 units**  
 Orients freshman majors and minors to the breadth, scope, and nature of the professional program in health, physical education, and recreation.

**PETH 214 Personal and Community Health** **4 units**  
 Principles applied to daily living.

**PETH 216 Basic Emergency Care** **2 units**  
 First aid, CPR, treatment of athletic injuries. Lecture and laboratory.

**PETH 235 Outdoor Recreation** **2 units**

Methods of leadership in camping activities. Special attention given to understanding campers and reaching the goals and purposes of the program. Lecture and field experience. Offered alternate years.

**PETH 237 Playground Leadership** **2 units**

Aspects of playground and community center operations; leadership; program techniques in private and semipublic agencies.

**PEAC 244-257 Professional Team Activities** **1 unit**

PEAC 244	Baseball	PEAC 249	Track and Field
PEAC 245	Men's Basketball	PEAC 250	Men's Soccer
PEAC 246	Women's Basketball	PEAC 255	Women's Softball
PEAC 247	Field Hockey	PEAC 256	Volleyball
PEAC 248	Men's Flagball	PEAC 257	Women's Flagball

**PETH 264, 265, 266 Techniques of Officiating** **2, 2, 2 units**

Autumn: flagball and soccer (men); basketball and volleyball (women). Winter: basketball and volleyball (men); flagball and field hockey (women). Spring: softball and track and field (men and women).

**PEAC 274-278 Professional Individual Activities** **1-2 units**

PEAC 274	Tennis	PEAC 277	Golf
PEAC 275	Archery	PEAC 278	Badminton
PEAC 276	Gymnastics		

Prerequisite: PEAC 116.

Upper division **PEAC 306, 307, 308 Underwater Technology** **3, 3, 3 units**

Advanced diving.

Prerequisite: Scuba certificate.

**PETH 314 Community Health** **3 units**

Problems, agencies, and programs of health in the local, state, national, and world community. Visits to public health facilities. Offered alternate years.

**PETH 334 Leisure, Recreation, and Society** **4 units**

Principles and organization; public and private agencies; community resources; methods of converting leisure into useful, cultural, and creative activities. Lecture and laboratory. Offered alternate years.

**PETH 355 Analysis of Fall Team Activities** **3 units**

Materials, methods, and teaching progression. Men: flagball and soccer. Women: field hockey and flagball. Lecture and laboratory.

Prerequisite: Men, PEAC 248, 250; women, PEAC 247, 257.

**PETH 356 Analysis of Winter Team Activities** **3 units**

Materials, methods, and teaching progression in basketball and volleyball. Lecture and laboratory.

Prerequisite: Men, PEAC 245, 256; women, PEAC 246, 256.

**PETH 357 Analysis of Spring Team Activities** **3 units**

Materials, methods, and teaching progression in track and field. Men: baseball; women: softball. Lecture and laboratory.

Prerequisite: Men, PEAC 244, 249; women, PEAC 249, 255.

**PETH 361, 362 Basic Horse Training Techniques** **2, 2 units**

Principles of horse training. Lecture and laboratory.

**PETH 364, 365 Equine Science** **2, 2 units**

Grooming, nutrition, reproduction, diseases.

**PETH 384 Elementary School Physical Education** **2 units**

Methods and materials applied to all grade levels. For nonphysical education students.

Prerequisite: PEAC 181.



- PETH 385 Practicum in Elementary School Physical Education** 2 units  
Observation and field experience with various grade levels in movement activities. Lecture and laboratory.  
Prerequisite: PEAC 181.
- PETH 408 Management of Physical Education and Intramural Programs** 4 units  
Principles and policies applied to programs, staff, facilities, and equipment. Includes health, recreation, and intramurals.
- PETH 414 Mental Health and Drug Abuse Education** 4 units  
Mental health; abuse of drugs, alcohol, and tobacco. Teaching methods.
- PETH 415 Consumer Health and Disease** 4 units  
Consumer health, degenerative and communicable diseases. Teaching methods. Offered alternate years.
- PETH 416 Human Sexuality** 2 units  
Family living and sex education. Teaching methods. Offered alternate years.
- PETH 417 Safety Education** 2 units  
Principles of industrial, home, highway, and school safety; civil defense. Offered alternate years.
- PETH 418 School Health Programs** 4 units  
The total health program; services; environment.
- PETH 419 Fieldwork in Health** 2-12 units  
Directed experience in public and private health agencies.
- PETH 424 Biomechanics** 4 units  
Related to sports, rhythmical activities, and correction of functional defects. Three class periods, one three-hour laboratory per week.  
Prerequisite: BIOL 111 or 131, 132.
- PETH 426 Exercise Physiology** 4 units  
Effects of movement upon the structure and function of body organs. Three class periods, one three-hour laboratory per week.  
Prerequisite: BIOL 112, or 131, 132.
- PETH 427 Motor Learning** 4 units  
Principles involved in effective motor learning. Three class periods, one three-hour laboratory per week.
- PETH 429 Tests and Measurement** 4 units  
Statistics and tests relating to measurements in physical education and health; emphasis on test administration and application of results. Three class periods, one three-hour laboratory per week.
- PETH 437 Recreation for Special Groups** 2 units  
Recreational activities for mentally and physically ill, handicapped, and special groups. Lecture and laboratory.
- PETH 438 Recreational Leadership** 4 units  
Theory and practice in planning, conducting, and evaluating recreation programs in the community, school, and church. Lecture and laboratory. Offered alternate years.
- PETH 439 Fieldwork in Recreation** 2-12 units  
Directed experience in public and private recreation agencies.
- PETH 444 Principles of Physical Fitness** 2 units  
The total physical fitness program. Theory and practice.

	PETH 483 Seminar in Physical Education, Health, and Recreation Principles, history, and professional preparation.	2 units
	PETH 489 God-Man-Sport Philosophical inquiry of the place of movement and sport within the framework of Seventh-day Adventist thinking. Does not apply toward a major or minor, but can apply toward the general requirement in religion.	4 units
	PETH 499 Directed Study Emphasis on research.	1-4 units
Graduate	PETH 505 History and Sociology of Physical Education	4 units
	PETH 506 Philosophy of Physical Education	4 units
	PETH 508 Administration and Issues of Physical Education Programs	4 units
	PETH 509 Curriculum and Facilities	4 units
	PETH 524 Human Performance Laboratory	1-4 units
	PETH 526 Scientific Aspects of Physical Activity	4 units
	PETH 527 Psychology of Physical Activity	4 units
	PETH 528 Laboratory Techniques	4 units
	PETH 585 Movement Education	3 units
	PETH 589 Research Methods	4 units
	PETH 599 Directed Study	2-4 units





## DEPARTMENT OF PHYSICS

Chairman EDWIN A. KARLOW, Associate Professor of Physics  
PH.D. Washington State University

Faculty LESTER H. CUSHMAN, Professor of Physics  
M.S. University of Southern California

JAMES W. RIGGS, JR., Professor of Physics  
PH.D. Texas A and M University

ALBERT E. SMITH, Professor of Physics  
PH.D. Michigan State University

RICHARD L. BOBST, Associate Professor of Physics  
M.A. University of South Dakota

Objectives Fostering the growth of intellectual curiosity that will extend through postcollege years, and building an appreciation of the role of physics in everyday living constitute the general objectives of the department. For the physics major, there are the additional objectives of adequate preparation for entrance to one of the professional curriculums or for graduate study in physics, for secondary teaching in physics, or for employment under the Civil Service classification of junior scientist-physicist or in a similar grade in private industry.

Preparation for teaching A student preparing to teach physics at the secondary level should plan to qualify for teaching credentials, and during his freshman or sophomore year he should consult the credentials adviser in the School of Education for detailed information concerning requirements.

A program leading to the Master of Arts degree in the teaching of physics is described in the BULLETIN of the School of Education.

### BACCALAUREATE MAJOR PROGRAMS

Physics A student majoring in physics completes either of the following programs:

Program A consists of the general requirements for the Bachelor of Arts degree (see *General Requirements*) and 68 units of coursework, including 40 units in physics, 28 units in another area of study such as biology, chemistry, mathematics, behavioral science, or industrial arts. Courses are selected in consultation with the department adviser.

Program B, designed for students preparing for graduate studies, consists of the general requirements for the Bachelor of Science degree (see *General Requirements*) and 60 units of coursework in physics and related fields selected in consultation with the department adviser. The cognate requirements are MATH 231, 232, 233.

Biophysics A student majoring in biophysics completes the general requirements for the Bachelor of Science degree (see *General Requirements*) and 56 units of coursework



in biology and physics including, BIOL 101, 102, 103, 404, 466; PHYS 211, 8 units from PHYS 212-215, 321, 458; BPHY 401; 8 units from PHYS: 344, 376, 464, 474; and 4 additional units in either biology or physics. Cognate requirements are CHEM 111, 112, 113, 371; MATH 131, 132, 231, or equivalent.

#### Engineering physics

A student majoring in engineering physics, emphasizing digital computer logic and electronics, completes the general requirements for the Bachelor of Science degree (see *General Requirements*) and 60 units of coursework in physics and related fields selected in consultation with the department adviser. The cognate requirements are MATH 131, 132, 231.

### HONORS PROGRAM

An honors program is open to qualified students who are interested in gaining research experience in physics. Because graduation with honors requires the equivalent of two years in the program, interested students should apply early.

Coursework is selected in consultation with a faculty committee and includes PHYS 499 each quarter the student is in the program. One or more oral examinations are required during the program.

### MINOR SEQUENCE

A minor in physics is 28 units selected in consultation with the department adviser.

### ASSOCIATE DEGREE PROGRAM

#### Engineering physics

A student in the associate degree program in engineering physics completes the general requirements for the Associate in Science degree (see *General Requirements*) and 32 units of coursework selected in consultation with the department adviser.

### PHYSICS

#### Lower division

**PHYS 117 Introduction to Physics** **4-6 units**  
Elementary mechanics, fluids, sound, electricity, and atomic structure based on a study of models. A preprofessional course for students entering nursing, radiological technology, and other health-oriented professions. Does not apply toward a major in physics.

**PHYS 204 Physics of Music and Speech** **4 units**  
Sound waves and their relation to music and speech. Does not apply toward a major in physics. Offered on even-numbered years, winter quarter.

**PHYS 211 General Physics: Mechanics** **4 units**  
Required of students majoring in physics or in premedical or predental programs. Three class periods, one three-hour laboratory per week.  
Prerequisite: Algebra and trigonometry.

Upper division	<b>PHYS 212 General Physics: Electricity and Magnetism</b>	<b>4 units</b>
	Three class periods, one three-hour laboratory per week. Prerequisite: PHYS 211.	
	<b>PHYS 213 General Physics: Atomic and Nuclear Physics</b>	<b>4 units</b>
	Three class periods, one three-hour laboratory per week. Prerequisite: PHYS 211.	
	<b>PHYS 214 General Physics: Heat and Fluids</b>	<b>4 units</b>
	Three class periods, one three-hour laboratory per week. Prerequisite: PHYS 211.	
	<b>PHYS 215 General Physics: Light and Sound</b>	<b>4 units</b>
	Three class periods, one three-hour laboratory per week. Prerequisite: PHYS 211.	
	<b>PHYS 299 Directed Study</b>	<b>1-4 units</b>
	May be repeated for additional credit.	
	<b>PHYS 304 Astronomy</b>	<b>4 units</b>
	Introduction to astronomy for the nonscience student.	
	<b>PHYS 321, 322 Theoretical Mechanics</b>	<b>4, 4 units</b>
	Newtonian mechanics, oscillatory motion, calculus of variation, Lagrangian and Hamiltonian dynamics, central force motion, two-particle collisions, dynamics of rigid bodies, and special theory of relativity.	
	<b>PHYS 331 Geometrical Optics</b>	<b>4 units</b>
	Lens design and use; aberrations, radiometry, optical instruments.	
	<b>PHYS 332 Modern Optics</b>	<b>4 units</b>
	Diffraction and interference phenomena; Fourier integral transforms in optics, lasers, and holography.	
	<b>PHYS 344 Introduction to Quantum Mechanics</b>	<b>4 units</b>
	Postulates, one- and two-dimensional box problems, Schrödinger's equation, and the simple harmonic oscillator.	
	<b>PHYS 376 Atomic and Molecular Physics</b>	<b>4 units</b>
	Perturbation solutions of Schrödinger's equation, atomic and molecular application of quantum mechanics. Prerequisite: PHYS 344.	
	<b>BPHY 401 Biophysics</b>	<b>4 units</b>
	Physical phenomena associated with biological organisms.	
	<b>PHYS 415 Advanced Physics Laboratory</b>	<b>2-4 units</b>
	Optics; nuclear and spectroscopic physics.	
	<b>PHYS 434 Advanced Modern Optics</b>	<b>4 units</b>
	Polarized light, dispersion theory, crystal propagation.	
	<b>PHYS 464 Thermal Physics</b>	<b>4 units</b>
	Classical statistical mechanics, quantum statistics, and applications to thermodynamics.	
	<b>PHYS 474 Nuclear Physics</b>	<b>4 units</b>
	Radioactivity, radiation detectors, nuclear reactions, nuclear models, reactor physics, and fission.	
	<b>PHYS 475 Solid State Physics</b>	<b>4 units</b>
	Bonding of solids, crystal structure, specific heats, bond theory of solids.	

- PHYS 481 Electromagnetism** 4 units  
Theory of electric and magnetic fields, including solution of Laplace's and Poisson's equations; motion of bodies and particles in magnetic and electric fields.
- PHYS 489 Christianity and the Rational Man** 4 units  
Man's response to God's call; structures of belief in religion and science. Does not apply toward a major or minor, but can apply toward the general requirement in religion. Identical to **MATH 489**.
- PHYS 499 Directed Study** 2-4 units  
May be repeated for credit.

## DIGITAL AND LINEAR ELECTRONICS

- Lower division **PHYS 154 Electricity for Electronics** 2-4 units  
Self-paced, programmed, laboratory-oriented course in elementary DC and AC electricity.
- PHYS 256 Digital Computer Electronics** 4 units  
Self-paced, programmed, laboratory-oriented course.  
Prerequisite: **PHYS 154** or **212**.
- Upper division **PHYS 355 Digital Computer Logic** 4 units  
Self-paced, programmed, laboratory-oriented course.  
Prerequisite: **PHYS 256**.
- PHYS 454 Computer Interfacing** 4 units  
Directed study, individual project.  
Prerequisite: **PHYS 355**.
- PHYS 458 Biomedical Electronic Instrumentation** 4 units  
Self-paced, programmed, laboratory-oriented course for the biophysics major and others by permission.
- Graduate **PHYS 527 Topics in Theoretical Physics** 4 units
- PHYS 599 Research and Thesis in Physics** 1-4 units

## EARTH SCIENCE

- Lower division **ESCI 205 Geology** 4 units
- Upper division **ESCI 334 Earth Science Fieldwork** 1-4 units

## ENGINEERING

The first year of a baccalaureate program in engineering may be completed in the College of Arts and Sciences for transfer to Walla Walla College.



## DIVISION OF RELIGION

Dean	WALTER F. SPECHT, Professor of New Testament PH.D. University of Chicago	
Associate dean	KENNETH L. VINE, Professor of Old Testament PH.D. University of Michigan.	
La Sierra campus faculty	HAROLD E. FAGAL, Professor of New Testament PH.D. Fuller Theological Seminary	
	J. CECIL HAUSSLER, Emeritus Professor of Religion PH.D. University of Southern California	
	NIELS-ERIK A. ANDREASEN, Associate Professor of Old Testament PH.D. Vanderbilt University	
	THEADORE J. CHAMBERLAIN, Associate Professor of Religion and Society D.MIN. School of Theology at Claremont	
	V. BAILEY GILLESPIE, Associate Professor of Theology and Christian Personality PH.D. Claremont Graduate School and University Center	
	PAUL J. LANDA, Associate Professor of Church History PH.D. Vanderbilt University	
	F. LYNN MALLERY, Associate Professor of Applied Theology D.MIN. San Francisco Theological Seminary	
	CHARLES W. TEEL, JR., Associate Professor of Religion and Society PH.D. Boston University	
	JONATHAN M. BUTLER, Assistant Professor of Church History PH.D. University of Chicago	
	MADELYNN J. HALDEMAN, Assistant Professor of Biblical Studies (on leave) M.A. Andrews University	
	DAVID D. OSBORNE, Assistant Professor of Religion M.DIV. Andrews University	
	ROBERT L. OSMUNSON, Assistant Professor of Religion ED.D. University of Southern California	
	T. RICHARD RICE, Assistant Professor of Theology PH.D. University of Chicago	
Lecturer	JOHN J. ROBERTSON, Lecturer in Theological Studies D.MIN. Andover-Newton Theological School	
Field personnel	WAYNE BENT	BILL McVEY
	GARY L. CASE	WILLIAM MILLARD
	ROBERT COWAN	THOMAS PANGBORN
	J. M. DOGGETT	ROBERT POOLEY
	JAMES FELL	NORMAN SNIPES
	DANIEL FERNANDEZ	JERRY S. SORENSEN
	H. FLYNN	E. W. VOYLES
	HENRY FUSS	RICHARD WERTZ
	VARNER LEGGITT	J. W. WOLTER

The Division of Religion, while not a part of the College of Arts and Sciences, is closely affiliated with it. Members of the religion faculty who teach on the La Sierra campus are also members of the College faculty; and coursework in the Division of Religion is part of every degree and certificate program in the College. In connection with these interrelationships, the objectives of the division are:

- Objectives
1. To lead students to an understanding of God as Creator and Redeemer, and of man's appropriate response to him.
  2. To develop an appreciation for and an understanding of the Bible as the written Word of God, an infallible rule of faith and practice for the Christian.
  3. To direct students to an understanding of the basic teachings of the Christian faith and to an articulate expression of that faith as believed and taught by the Seventh-day Adventist church.
  4. To lead students to a study of the Bible that utilizes the methodologies of biblical, theological, and historical studies, so that as laymen or ministers they will be able to participate in the work of the church as effective teachers of the Word.
  5. To prepare students for the ministry of the church by teaching the basic skills necessary to move into practical fieldwork and seminary training.
  6. To communicate to students a sense of personal vocation in connection with the church's mission to preach the Gospel of the kingdom to all the world.
  7. To help students to develop a personal religious life of faith, prayer, worship, and service to their fellowmen.

#### BACCALAUREATE MAJOR PROGRAMS

Religion A student majoring in *religion* completes the general requirements for the Bachelor of Arts degree (see *General Requirements*) and 56 units of coursework in religion, including RELB 104, 224, 225, 226, 244, 414, 415, 416; RELH 445, 446, 447; RELT 254, 434, 435, 436.

Ministerial studies The ministerial studies program prepares individuals, on a preseminary level, for effective participation in the church's ministry within the contemporary world. It grounds this ministry in the biblical, historical, theological, and social witness of Christianity in general and Seventh-day Adventism in particular. The program endeavors to make the ministry proficient by careful development of such ministering arts as preaching, teaching, counseling, pastoral care, and leadership. It achieves this with the following specific objectives.

1. A cultivation of the personal and social dimensions of spiritual experience, including faith, prayer, worship, and service to others.
2. An understanding of the Old and New Testaments through use of the historical-theological method.
3. An introduction to the basic resources for biblical study, including a knowledge of the Greek language, for use in exegesis and sermon preparation.
4. A familiarity with the origin and transmission of the biblical text, the formation of the Canon, and its translation into various versions.



5. A knowledge of the historical development of Christian belief, practice, and mission, including the emphasis of the Seventh-day Adventist church.

6. An understanding of the basic tenets of Christianity as interpreted by Seventh-day Adventists, and an ability to communicate them to the contemporary world.

7. An application of theology to the practice skills of ministry, providing for the performance of the basic pastoral and educational tasks.

8. A study of Christian growth, methods of ministry, and effective witness in the community.

9. An examination of the church's corporate nature, the social dynamics of its institutionalization, and its interaction with other social structures.

A student who intends to major in ministerial studies applies to the Division of Religion during the spring quarter of his sophomore year. In addition, he completes, during that quarter, a prescribed battery of diagnostic tests which cost him \$10.00. These are planned, along with a two-hour counseling session, to help the student evaluate himself and his call to the ministry. Each application is considered by the faculty of the Division, and a letter of response is sent to each applicant before the fall quarter of his junior year.

The student is also required to take a proficiency examination in the fundamental beliefs of Seventh-day Adventists. Those who fail to make a satisfactory score in this examination must make up the deficiency by enrolling in RELT 245.

Ministerial studies,  
pastoral ministry

In the program of ministerial studies with emphasis in pastoral ministry, the student completes the general requirements for the Bachelor of Arts degree (see *General Requirements* in the BULLETIN of the College of Arts and Sciences) and the following required courses from the Division of Religion:

RELB 104, 224, 225, 226, 244, 414, 415, 416;

RELH 445, 446, 447;

RELP 106, 107, 264, 361, 362, 374, 375, 376, 399 (3 units), 436, 446, 447;

RELT 254, 434, 435, 436, 444, 464;

Cognates: RELL 281, 282, 283, 381, 382, 383.

Ministerial studies,  
education ministry

The requirements for the major in ministerial studies with emphasis in education ministry are:

1. Completion of the ministerial studies requirement as listed for pastoral ministry.

2. Completion of the following courses in educational ministry:

RELP 400 Seminar in Educational Ministry .5 units

RELP 411, 412, 413 Fieldwork in Educational Ministry 3 units

RELP 414 Youth Ministry 2 units

RELP 468 Methods in Education Ministry 4 units

EDFO 404 Philosophy of Seventh-day Adventist Education 3 units



3. To meet the General Conference Department of Education requirements for a standard credential in secondary education, the student must complete the program outlined below (either in the course of the degree program or during the fifth-year program).

EDCI 204	Orientation to Teaching	3 units
EDCI 414	Curriculum and Instruction: Reading	5 units
EDCI 430	Secondary School Curriculum and Instruction	6 units
EDFO 305	Psychological Foundations of Education	4 units
EDCI 457	Directed Teaching in the Secondary School	18 units

**Interdisciplinary** For the benefit of students preparing for certain kinds of specialized ministry and/or graduate study, a few interdisciplinary curriculums have been developed in religion and history (with emphasis in Church history), religion and social work, and religion and behavioral science. Information concerning these curriculums may be obtained from the Dean's Office.

### MINOR SEQUENCES

The following minors are available:

Religion, 32 units (16 upper division), including RELB 104, 224 or 225, 244, 414 or 415; RELT 254, 434, 435; electives, 4 units upper division.

Biblical languages, 33 units, including RELL 281, 282, 283, 381, 382, 383, 481, 482, and one of the following: 476, 477 or 486.

### ASSOCIATE DEGREE PROGRAM

A student in the associate degree program in Bible work and personal ministry (a program designed for the more mature student) completes the general requirements for the Associate in Arts degree (see *General Requirements*) and 50 units of coursework including RELB 104, 206, 207, 244, 404 (4 units), 424; RELT 205, 245, 354; RELP 264, 281, 282, 283, 436, 446, 447. Cognate requirements are PSYC 104; SOCI 104; SOSR 104.



## BIBLICAL LANGUAGE

- Lower division **RELL 281, 282, 283 Beginning Greek I, II, III** 4, 4, 4 units  
Linguistic analysis of grammatical structure of both New Testament Greek sentences and English sentences, with emphasis on their differences. A basic vocabulary is required.
- Upper division **RELL 381, 382, 383 Intermediate Greek I, II, III** 3, 3, 3 units  
Emphasis on syntax as it occurs in the Greek New Testament. Passages for translation and for exegesis selected from the Gospels and the Pauline Epistles.  
Prerequisite: Average grade of C for the 3 quarters of RELL 281, 282, 283, with minimum grade of C in RELL 283.
- RELL 476 The Septuagint** 4 units  
Reading of selected passages from the Greek Old Testament text, Canon, and interpretation, and its importance for New Testament lexicography, grammar, and style.
- RELL 477 New Testament Manuscripts and Versions** 3-4 units  
The transmission of the New Testament text; history and methods of textual criticism. Collation and study of microfilms of actual Greek manuscripts.
- RELL 481, 482 Basic Hebrew I, II** 4, 4 units  
Biblical Hebrew grammar and textual materials.
- RELL 486 Seminar in Biblical Languages** 4 units  
Prerequisite: Consent of instructor.
- RELL 499 Directed Study** 1-4 units  
Limited to students majoring in religion or ministerial studies.

## BIBLICAL STUDIES

- Lower division **RELB 104 Life and Teachings of Jesus** 4 units  
Life and ministry of Jesus as reconstructed from the gospels; his teachings as they relate to current conditions and needs in the church and world.
- RELB 204 Acts of the Apostles** 4 units  
The New Testament narrative, with emphasis on problems the Church faced in its earliest periods as it prepared to carry the Christian gospel into the Gentile world. Does not apply toward a major in religion or ministerial studies.
- RELB 206 Message and Times of the Old Testament** 4 units  
Survey of the Old Testament, with emphasis on its historical setting, unity, and revelation of the plan of redemption. Does not apply toward a major in religion or ministerial studies.
- RELB 207 Message and Times of the New Testament** 4 units  
Survey of the New Testament, with emphasis on its historical setting, unity, and abiding message as God's new covenant of grace. Does not apply toward a major in religion or ministerial studies.
- RELB 224 History and Theology of the Old Testament I** 4 units  
Creation to the conquest, with special consideration of the covenant relationship between God and Israel and of God's saving acts. Preaching values from the Old Testament.
- RELB 225 History and Theology of the Old Testament II** 4 units  
Israel: entrance into the land, the establishment of kingship, worship in the temple (Psalms), and Wisdom teachings (Job, Proverbs, and Ecclesiastes). These areas of the Old Testament will be considered in the light of today's preaching ministry.



	<b>RELB 226 History and Theology of the Old Testament III</b>	<b>4 units</b>
	Emphasis on the prophetic gift as it was manifested within the setting and times of Old Testament prophets, from 800 B.C. to 400 B.C. Selected prophetic writings from each century studied within the framework of the hermeneutical principles given.	
	<b>RELB 244 Daniel and Revelation</b>	<b>4 units</b>
	Historical and prophetic study, with emphasis on gospel implications.	
	<b>RELB 299 Directed Study</b>	<b>1-4 units</b>
	Prerequisite: Consent of the department chairman.	
Upper division	<b>RELB 304 Understanding and Sharing Your Bible</b>	<b>4 units</b>
	A theology of and methodology for a successful witness of Christ and his word. Not open to students majoring in ministerial studies.	
	<b>RELB 404 New Testament Letters</b>	<b>2-4 units</b>
	Verse-by-verse study of selected documents, with emphasis on their theological and practical implications for Christians today. Does not apply toward a major or minor in religion or ministerial studies.	
	<b>RELB 414 New Testament Epistles I</b>	<b>4 units</b>
	Reconstruction of the life of Paul and the setting of his early letters from Acts, Thessalonian and Corinthian letters, with special attention to the doctrines and practical problems they were written to correct and to their significance for the church today.	
	<b>RELB 415 New Testament Epistles II</b>	<b>4 units</b>
	Romans, Galatians, and the prison letters of Paul, emphasizing the doctrines of sin, salvation, and sanctification, and the relation of law and grace to Christian liberty.	
	<b>RELB 416 New Testament Epistles III</b>	<b>4 units</b>
	Paul's ecclesiology, from his pastoral letters to Timothy and Titus. Hebrews, and the letters of James, Peter, John, and Jude as they relate to theological and ethical content of Christianity.	
	<b>RELB 424 Old Testament Prophets</b>	<b>4 units</b>
	Origin and development of Old Testament prophecy as a background for understanding the prophetic writings. Introduction to each writing prophet; the relevance of his message to his own time and to the present. Does not apply toward a major in religion or ministerial studies.	
	<b>RELB 430 Fieldwork in Middle East Archaeology</b>	<b>1-8 units</b>
	Prerequisite: Consent of the instructor.	
	<b>RELB 445 Biblical Archaeology</b>	<b>2-4 units</b>
	The Bible in its religious, cultural, and political environment as illuminated by discoveries of modern archaeology. Does not apply toward a major in religion or ministerial studies.	
	<b>RELB 499 Directed Study</b>	<b>1-4 units</b>
	Limited to students majoring in religion or ministerial studies.	
Graduate	For graduate courses in Biblical Studies, see the BULLETIN of the Division of Religion.	



## HISTORICAL STUDIES

Only one course in this section may be chosen to apply toward the general education requirement in religion.

- Upper division
- RELH 415 Contemporary American Denominations** 3-4 units  
Introduction to the current denominational scene in America through lectures; the reading of primary and secondary source materials; guest representatives from various religious groups; and visits to Catholic, Protestant, Jewish, and sectarian services. Not open to those who have taken RELH 411, 412.
- RELH 445 The Christian Heritage: The Making of Christendom** 4 units  
Growth and expansion of the Christian Church and the development of Christian thought from the Apostolic Age to A.D. 1350.
- RELH 446 The Christian Heritage: The Reform of Christendom** 4 units  
Christianity in the High Middle Ages and the Reformation, with emphasis on sixteenth century developments and the shaping of new movements and churches down to A.D. 1648.
- RELH 447 The Christian Heritage: Christendom since A.D. 1648** 4 units  
Growth of modern religious traditions, their influence in Europe and North America, with particular emphasis on the American religious scene and the development of Adventism.
- RELH 455 Religion in American Life** 3-4 units  
A study of the intellectual, social and cultural impact of religion on American society. Identical to HIST 455.
- RELH 466 The Early Christian Church** 3-4 units  
Study from primary sources of the important men, developments, and ideas in the Christian Church from apostolic times through the fifth century A.D. Offered alternate years. Identical to HIST 466.
- RELH 467 The Medieval Church** 3-4 units  
Study from primary sources of the important men, developments, and ideas in the Christian Church from the sixth through the fifteenth centuries. Offered alternate years. Identical to HIST 467.
- RELH 468 History of the Papacy** 3-4 units  
Historical and theological development of the Papacy and Roman Catholicism during patristic, medieval, and modern periods. Offered alternate years. Identical to HIST 468.
- RELH 474 The Lutheran Reformation** 3-4 units  
A study of Martin Luther, his theology, and the Reformation he initiated down to 1555. Offered alternate years. Identical to HIST 474.
- RELH 476 The Swiss Reformation and Calvinism** 3-4 units  
Leading men of the Swiss Reformation (Zwingli, Bullinger, Calvin, and Beza) and the theological and sociological influences of Calvinism. Offered alternate years. Identical to HIST 476.
- RELH 478 The English Reformation** 3-4 units  
Main historical forces and religious movements of the English Reformation until the Westminster Assembly. Offered alternate years. Identical to HIST 478.
- RELH 484 Twentieth-Century Church History** 3-4 units  
Modern religious trends and their impact on church and society. Offered alternate years. Identical to HIST 484.
- RELH 485 History of Seventh-day Adventism** 3-4 units  
The important individuals and issues in the Adventist movement from 1844 to 1922. Identical to HIST 485.

- RELH 486 Ellen G. White: Her Life and Thought** 3-4 units  
A study of the key events in the life of Ellen G. White (1827-1915) and her major theological contributions. Offered alternate years. Identical to HIST 486.
- RELH 487 Natural Theology: A Historical Survey** 4 units  
A historical survey, beginning with the Middle Ages, of different approaches to the question of faith and reason, or what can be known of God by rational inquiry alone, within Christian thought. Identical to HIST 487.  
Prerequisite: Consent of instructor.
- RELH 488 Protestant Thought in the Twentieth Century** 4 units  
An examination of the major figures, issues, and resources of contemporary Protestant theology. Identical to HIST 488.  
Prerequisite: Consent of instructor.
- RELH 499 Directed Study** 1-6 units  
Limited to students majoring in religion or ministerial studies.

Graduate For graduate courses in Historical Studies, see the BULLETIN of the Division of Religion.

## PROFESSIONAL STUDIES

Courses in this section do not apply toward the general religion requirement in the College of Arts and Sciences or the School of Education.

- Lower division **RELP 106, 107 Introduction to Ministry** 1, 1 unit  
The call and role of the minister as they relate to the specific areas of ministerial education and practice.
- RELP 208 Field Literature Evangelism** 5 units  
Summer program in field literature evangelism.  
Prerequisite: Satisfactory prior arrangements with the Division of Religion and the respective conference publishing department.
- RELP 264 Evangelism** 4 units  
Theory and practice of communicating Adventist beliefs to individual groups.
- RELP 281, 282, 283 Seminar in Personal Ministry** 2, 2, 2 units  
Practice and application of the principles involved in Bible work and personal ministry.  
Prerequisite: Consent of instructor.
- Upper division **RELP 361, 362 Homiletics I, II** 4, 4 units  
The art of preaching; church administration; development of proper methodologies. Taken concurrently with RELT 374, 375, 376.
- RELP 366 Field Practicum** 2-6 units  
Instruction and participation in visitation, Bible studies, church administration, special services, and public evangelism. Selected location. Summer only.  
Prerequisite: Consent of instructor.
- RELP 374, 375, 376 Externship** 1, 1, 1 unit  
Practical application of the principles of church leadership and preaching by assignment to local churches. Taken concurrently with RELP 361 and 362. Limited to juniors and seniors majoring in ministerial studies.
- RELP 399 Seminar in Ministerial Studies** 1/2 unit  
Limited to students majoring or minoring in religion or ministerial studies. May be repeated for additional credit to a maximum of 3 units.

- RELP 400 Seminar in Educational Ministry** 1/2 unit  
Discussions on the actual practice of educational ministry in school experience and the local church setting. Limited to students majoring or minoring in religion or ministerial studies with emphasis on the educational ministry. May not be repeated.
- RELP 411, 412, 413 Fieldwork in Educational Ministry** 1, 1, 1 unit
- RELP 415 Youth Ministry and the Local Church** 2 units  
Designed to provide insight into the theology, organization, and methods of local youth ministry. The problem of what to do in the local setting with youth as they grow toward God. Consideration of the problems of leadership, activities, models of ministry, and current materials available.
- RELP 436 Pastoral Counseling** 2 units  
The biblical and theological bases of and methodologies for pastoral counseling as it relates to the unique role of the minister. For ministerial studies majors.
- RELP 446, 447 Senior Colloquium I, II** 1, 1 unit  
The application of various theological and ministerial disciplines to contemporary issues that face the church. For ministerial studies majors.
- RELP 468 Methods of Educational Ministry** 4 units  
A critical examination of the foundations, theories, and practices of Christian education as an aspect of ministry. Emphasis on practical application of theology and religious development as it relates to the educational setting. Development of materials for secondary Bible teaching.  
Prerequisite: RELT 464.
- RELP 437 Seminar in Pastoral Counseling** 2 units  
Prerequisite: Consent of instructor.
- RELP 499 Directed Study** 1-4 units  
Limited to students majoring in religion or ministerial studies.

## THEOLOGICAL STUDIES

- Lower division**
- RELT 106 Introduction to Seventh-day Adventist Beliefs** 4 units  
The biblical basis, formulation, and implications of the theological convictions of Seventh-day Adventists, with emphasis on those beliefs that distinguish Adventists from other Christians. Limited to students who are not Seventh-day Adventists. Does not apply toward a major in religion or ministerial studies.
- RELT 205 Dynamics of Personal Religion** 4 units  
The experience of forgiveness, acceptance, and faith; the place and function of prayer, worship, Bible study, fellowship, and witness in religious life. Does not apply toward a major in religion or ministerial studies.
- RELT 245 Studies in Seventh-day Adventist Beliefs** 4 units  
Fundamental doctrines of Christianity as taught by the Seventh-day Adventist church. Does not apply toward a major in religion or ministerial studies.
- RELT 254 Ellen G. White and the Church** 4 units  
The prophetic ministry of Ellen G. White in relation to the origin and development of Adventism, with emphasis on the present significance of her writings.
- Upper division**
- RELT 354 Adventist Eschatology** 4 units  
Study and chronological organization of final events of history as presented in the writings of Ellen G. White. Does not apply toward a major in religion or ministerial studies.
- RELT 404 Christian Foundations** 2-4 units  
Basic assumptions of Christian belief: the validity of religious experience, the reality of God, the meaning of revelation, the uniqueness of Christianity among world religions. Not open to students who take RELT 436.



- RELT 434 Dimensions of Salvation** **4 units**  
 Soteriology, including Christology, atonement, and sanctification; the Sabbath; the church as the community of faith; the final destiny of man.  
 Prerequisite: Senior standing or consent of the instructor.
- RELT 435 Christian Understanding of God and Man** **4 units**  
 Theological methodology; the nature and function of revelation; attributes of God; the nature of man.  
 Prerequisite: Senior standing or consent of the instructor.
- RELT 436 Religious Belief and the Modern World** **4 units**  
 Reality and relevance of God for contemporary man.  
 Prerequisite: Senior standing or consent of the instructor.
- RELT 437 Current Issues in Adventism** **4 units**  
 Selected questions of current interest concerning theological understanding, ecclesiastical polity, church policies, and practices, etc., in preparation for active involvement in the life of the church. Does not apply toward a major in religion or ministerial studies.  
 Prerequisite: Consent of the instructor.
- RELT 444 Church and Society** **4 units**  
 Exploration of biblical themes which call the individual of faith and the community of faith to fulfill personal as well as social obligations. Examinations of the dynamics involved as religious movements evolve toward religious institutions. Models of relationship between church and world.
- RELT 454 Christian Social Ethics** **2-4 units**  
 Theological foundations of ethics; methods for making sound ethical judgments; implications of Christian belief for selected problems in personal and social ethics. Does not apply toward a major in religion or ministerial studies.
- RELT 464 Religious Development and Nurture** **4 units**  
 Biblical principles of emerging self-identity and faith concepts; religious development of children, adolescents, and youth; religious learning problems and practical methodologies in communicating religious values.
- RELT 484 Seminar in Personal Religion** **2-4 units**  
 Advanced study of the dynamics of personal religion. Does not apply toward a major in religion or ministerial studies.
- RELT 485 Seminar on Church** **2-4 units**  
 The nature, mission, and function of church. Sources include biblical denominational, and contemporary literature.
- RELT 499 Directed Study** **1-4 units**  
 Limited to students majoring in religion or ministerial studies.

Graduate For graduate courses in Theological Studies, see the BULLETIN of the Division of Religion.

## DEPARTMENT OF SECRETARIAL and BUSINESS EDUCATION

Chairman	LOIS E. McKEE, Professor of Secretarial and Business Education ED.D. University of Nebraska
Faculty	CHARLENE A. BAKER, Associate Professor of Secretarial and Business Education M.A. Columbia University Professional Diploma, Teacher of Business Subjects, Columbia University
	FAYE M. CHAMBERLAIN, Instructor in Secretarial and Business Education B.S. Columbia Union College

**Objectives** This department provides specialized instruction for office careers and teaching positions in business education.

**Preparation for teaching** A student preparing to teach secretarial or business skills at the secondary level should plan to qualify for teaching credentials, and during his freshman or sophomore year he should consult both his department adviser and the credentials adviser in the School of Education for detailed information concerning requirements.

A program leading to the Master of Arts degree in the teaching of business education is described in the School of Education BULLETIN.

### BACCALAUREATE MAJOR PROGRAMS

**Secretarial administration** A student majoring in secretarial administration completes the general requirements for either the Bachelor of Arts or Bachelor of Science degree (see *General Requirements*) and 54 units of coursework, including SECR 103, 121, 122, 123, 211, 212, 305, 324, 325, 376, 461, 462; 8 units of upper division electives in SECR. Cognate requirements are ACCT 201; ECON 254, 255; HMEC 289. Recommended courses are ACCT 202, 203; BUAD 381, 382.

**Secretarial administration/medical** A student majoring in secretarial administration/medical completes the general requirements for either the Bachelor of Arts or Bachelor of Science degree (see *General Requirements*) and 50 units of coursework, including SECR 103, 121, 122, 123, 211, 212, 244, 305, 325, 376, 461, 462; 4 units of upper division elective in SECR. Cognate requirements are ACCT 201; BIOL 107; ECON 254, 255; HMEC 289.

**Secretarial administration/legal** A student majoring in secretarial administration/legal completes the general requirements for either the Bachelor of Arts or Bachelor of Science degree (see *General Requirements*) and 46 units of coursework, including SECR 103, 121, 122, 123, 211, 212, 305, 325, 354, 376, 461, 462. Cognate requirements are ACCT 201; BUAD 381, 382; ECON 254, 255; HMEC 289.

**Secretarial administration/educational** A student majoring in secretarial administration/educational completes the general requirements for either the Bachelor of Arts or Bachelor of Science degree (see *General Requirements*) and 46 units of coursework, including SECR 103,

121, 122, 123, 211, 212, 305, 325, 376, 461, 462; EDFO 404 in the School of Education. Cognate requirements are ACCT 201; ECON 254, 255; HMEC 289; PSYC 405; EDFO 321 in the School of Education. A recommended course is PSYC 324.

Secretarial  
administration/  
editorial

A student majoring in secretarial administration/editorial completes the general requirements for either the Bachelor of Arts or Bachelor of Science degree (see *General Requirements*) and 50 units of coursework, including SECR 103, 121, 122, 123, 211, 212, 305, 325, 376, 461, 462; CMME 227, 228. Cognate requirements are ACCT 201; ECON 254, 255; HMEC 289; 8 units from CMME 329, 336, 337, 338, 346, 434, 435.

Business education

A student majoring in business education completes the general requirements for the Bachelor of Science degree (see *General Requirements*) and 80 units of coursework in secretarial skills and procedures, business, and economics, including SECR 103, 121, 122, 123, 305, 324, 376; ACCT 201, 202, 203; SECR 211, 212 or ACCT 301, 302; BUAD 341, 381, 382, 405; DAPR 204; ECON 254, 255; HMEC 446. Cognate requirements in the School of Education are EDCI 204, 414, 430, 435, 436; EDFO 305. A recommended course is EDCI 457.

## MINOR SEQUENCE

A minor in secretarial administration is 28 units (12 upper division), including SECR 103, 121, 122, 123, 461, 462.

## ASSOCIATE DEGREE PROGRAMS

Stenography

A student in the associate degree program in stenography completes the general requirements for the Associate in Arts degree (see *General Requirements*) and SECR 103, 121, 122, 123, 305, 325. Cognate requirements are ACCT 201; HMEC 289. Recommended courses are SECR 111, 112, 113, 211, 212, 326.

Medical office assisting

A student in the associate degree program in medical office assisting completes the general requirements for the Associate in Arts degree (see *General Requirements*) and SECR 103, 121, 122, 123, 244, 305, 325, 326. Cognate requirements are ACCT 201; BIOL 107; HMEC 289. Recommended courses are SECR 111, 112, 113, 211, 212.

## SECRETARIAL SKILLS AND PROCEDURES

Lower division

**SECR 101 Beginning Typewriting**

**4 units**

For students with no previous instruction.

**SECR 102 Intermediate Typewriting**

**4 units**

For students with some previous instruction who wish to improve skills or to qualify for advanced typewriting.

Prerequisite: SECR 101 or equivalent.



	<p><b>SECR 103 Advanced Typewriting</b> <b>4 units</b>  Typical typewriting problems to be solved by the secretary.  <b>Prerequisite:</b> SECR 102 or equivalent.</p> <p><b>SECR 104 Personal Typing Review</b> <b>2 units</b>  Improvement of typing skills. Individualized instruction, with emphasis on personal and business correspondence, term papers, and arranging material in columnar form. Does not apply toward a major in secretarial administration.</p> <p><b>SECR 110 Personal Shorthand</b> <b>2 units</b>  A new system of shorthand for use in personal notetaking. Programed instruction. Does not apply toward a major in secretarial administration.</p> <p><b>SECR 111, 112, 113 Theory of Gregg Shorthand</b> <b>4, 4, 4 units</b>  Speed goal for year: 80 words per minute on new material.</p> <p><b>SECR 121 Office Services I</b> <b>4 units</b>  Evaluation and refinement of basic skills in office work.</p> <p><b>SECR 122 Office Services II</b> <b>4 units</b>  Procedures involving the use of adding, calculating, transcribing, duplicating, and filing equipment.  <b>Prerequisite:</b> SECR 102, 121, or equivalent.</p> <p><b>SECR 123 Office Services III</b> <b>4 units</b>  Duties encountered in most offices: processing mail, making appointments, receiving callers, etc. Personal traits of the successful employee.  <b>Prerequisite:</b> SECR 102, 121, 122.</p> <p><b>SECR 124 Business Machines</b> <b>2 units</b>  Development of fast and accurate use of the adding and calculating machines; introduction to office telephone techniques, records management, and dictating equipment.</p> <p><b>SECR 211, 212 Shorthand Dictation and Transcription</b> <b>4, 4 units</b>  Development of shorthand speed; fast and accurate transcription at the typewriter. Speed goal: 120 words per minute on new material.  <b>Prerequisite:</b> SECR 103 (may be taken concurrently), 113, or equivalent.</p> <p><b>SECR 244 Secretary in a Medical Office</b> <b>4 units</b>  Organization of the medical office; procedures for making appointments, recording information, and other aspects; human relationships; introduction to medical terminology.  <b>Prerequisite:</b> SECR 102, 123.</p> <p><b>SECR 274 Medical Office Procedures</b> <b>3 units</b>  Supervised observation and experience in medical offices. Weekly conference with supervisor. May be repeated once for additional credit.  <b>Prerequisite:</b> SECR 244; consent of the department.</p> <p><b>SECR 299 Directed Study</b> <b>1-4 units</b></p>
Upper division	<p><b>SECR 305 Secretarial Seminar</b> <b>1/2 unit per quarter</b>  Enrichment program for secretarial and business education students. Required of all students majoring in a program of the department each quarter of attendance at the university. Recommended for students minoring in a program of the department.</p> <p><b>SECR 324 Business Communications</b> <b>4 units</b>  Effective written communication as a tool of management.</p> <p><b>SECR 325, 326 Word Processing</b> <b>4, 4 units</b>  Practice in the use of word processing equipment for form paragraphs and letters, machine transcription, and special typing projects in the student's specialized area.  <b>Prerequisite:</b> SECR 103, 123.</p>

- SECR 344 Secretary in a Medical Office** **4 units**  
 Additional assignments in SECR 244 for upper division credit. Not open to sophomores.  
 Prerequisite: SECR 102, 123.
- SECR 354 Secretary in a Law Office** **4 units**  
 Legal terminology and forms. Activities characteristic of secretarial work in the office of an attorney.  
 Prerequisite: SECR 123.
- SECR 376 Office Administration** **4 units**  
 Functions and activities. Interrelationships of personnel, equipment, and service.
- SECR 461, 462 The Administrative Secretary** **4, 4 units**  
 Attitudes, responsibilities, and personal qualities of the executive secretary. Class discussion, in-basket assignments, and work simulation. Offered alternate years.  
 Prerequisite: SECR 123.
- SECR 474, 475 Practicum in Secretarial Work** **3, 3 units**  
 Supervised work experience. Professional reading and conferences.  
 Prerequisite: Consent of the department.
- SECR 489 Ethics for the Christian Office Employee** **4 units**  
 Attitudes, responsibilities, and traits which should distinguish the Christian in an office environment. Does not apply toward a major or minor, but can apply toward the general requirement in religion. Offered alternate years.
- SECR 499 Directed Study** **1-4 units**

## BUSINESS EDUCATION

- Upper division **BUED 499 Directed Study** **1-4 units**
- EDCI 435, 436 Curriculum and Instruction in Business Education** **4, 4 units**  
 Literature, history, philosophy, and methods of business education. First quarter, shorthand and typewriting; second quarter, bookkeeping and general business.  
 Prerequisite: EDCI 430 (may be concurrent).
- Graduate **BUED 514-520 Workshop in Business Education** **2-3 units**  
 Concentrated consideration of a major problem or area in terms of procedures, materials, research, and individual projects.
- |                                 |  |
|---------------------------------|--|
| <b>BUED 514 Shorthand</b>       | <b>BUED 517 Bookkeeping and Accounting</b> |
| <b>BUED 515 Typewriting</b>     | <b>BUED 518 General Business</b>           |
| <b>BUED 516 Office Practice</b> | <b>BUED 519 Data Processing</b>            |
- BUED 525 Trends and Problems in Business Education** **4 units**  
 Analysis of problems, trends, and recent developments in business education, with particular attention to individual student needs or interests.
- BUED 527 Evaluation of Research in Business Education** **4 units**  
 Analysis of major research studies and the classroom relevance of their findings.
- BUED 614 Seminar in Office Administration** **4 units**  
 Contemporary problems in office administration. Emphasis on trends and developments and on individual student research.
- BUED 615 Curriculum Seminar in Business Education** **4 units**  
 History, philosophy, and processes of curriculum construction. Development of a curriculum and of individual business courses.



## INTERDEPARTMENTAL COURSES

### EARTH SCIENCE

ESCI 205 Geology 4 units  
Geological processes of the earth, including rock formation, wind and water erosion, mountain building, volcanic activity, and earthquakes. Field trips.

ESCI 334 Earth Science Fieldwork 1-4 units  
Field study of earth science problems.  
Prerequisite: ESCI 205 or consent of the instructor.

ESCI 431, 432 Geochemistry 4, 4 units  
Chemical concepts and their geochemical applications in areas of interest in elementary geology.  
Prerequisite: CHEM 111, 112, 113; ESCI 205 or consent of instructor.

ESCI 531, 532 Advanced Topics in Geochemistry 4, 4 units  
Prerequisite: CHEM 111, 112 113; ESCI 205 and consent of instructor.





## INTERNATIONAL DIMENSIONS

- Lower division
- INDM 111 The Human Being and Society 4 units**  
A psycho-sociological approach to the Western ethic and culture to determine the meaning of individuality, the worth of the individual, and his relationship to the society in which he lives.
- INDM 112 World Religions 4 units**  
A study of the major religions of the world to serve as a background for understanding the culture and civilization of the different areas of the world.
- INDM 113 Problems in Cultural Geography and International Relations 4 units**  
A survey of the physical and cultural elements of landscape, the distribution of cultural traits, and the problems facing this international community.
- INDM 161 Europe and the United States 4 units**  
Western ideas and policies that have molded the social, economic, and political climate in different areas of the world; the West's relationship with other areas; the Common Market and its impact on the world.
- INDM 162 Latin America 4 units**  
Historical backgrounds, anthropological, socio-political insights into Latin American society, the psychological make-up of the Latin American, population control, problems of agriculture, health, and nutrition.
- INDM 163 The Near and Middle East 4 units**  
The religious, political, and social conditions which have shaped the thinking of the people of the Near and Middle East; the present conflict; its impact on the West and on the world.
- INDM 261 Central African Regions 4 units**  
The religious, political, and social background which explains the African's dilemma caused by his confrontation with the West; the psychological makeup of the people of Africa, with special concentration on the Central African regions.
- INDM 262 The Far East 4 units**  
Historical encounters; the mysticism of the East vs the Christian ethic of the West; problems of disease and famine; the technical civilizations and their relations with the more primitive peoples; their relationship to the Western world.
- INDM 271 Seminar on Location in Latin America 4 units**  
A two-week orientation program followed by a four-week period in which students may pursue individual interests such as health care facilities, the economic situation, the agricultural outlook, the literature/art of the country, etc.  
Prerequisite: INDM 162.
- INDM 272 Seminar on Location in the Near/Middle East 4 units**  
A two-week orientation program followed by a four-week period in which students may pursue individual interests on problems of the Near or Middle East.  
Prerequisite: INDM 163.
- INDM 273 Seminar in International Issues 4 units**  
The study of such problems as population growth, international immigration, education, energy and food sources, international business ethics, etc. Students will study ways and means and gain tools necessary to cope with some of these problems.  
Prerequisite: INDM 113.
- INDM 274 Seminar on Location in Central Africa 4 units**  
A two-week orientation program followed by a four-week period in which students may pursue individual interests such as tribes vs tribes, local vs central government; the diseases of Africa, health and nutrition; agricultural problems.  
Prerequisite: INDM 261.
- INDM 275 Seminar on Location in the Far East 4 units**  
A two-week orientation program followed by a four-week period in which students may pursue individual interests concerning the culture and civilization of the area.  
Prerequisite: INDM 262.

## LIBRARY SCIENCE

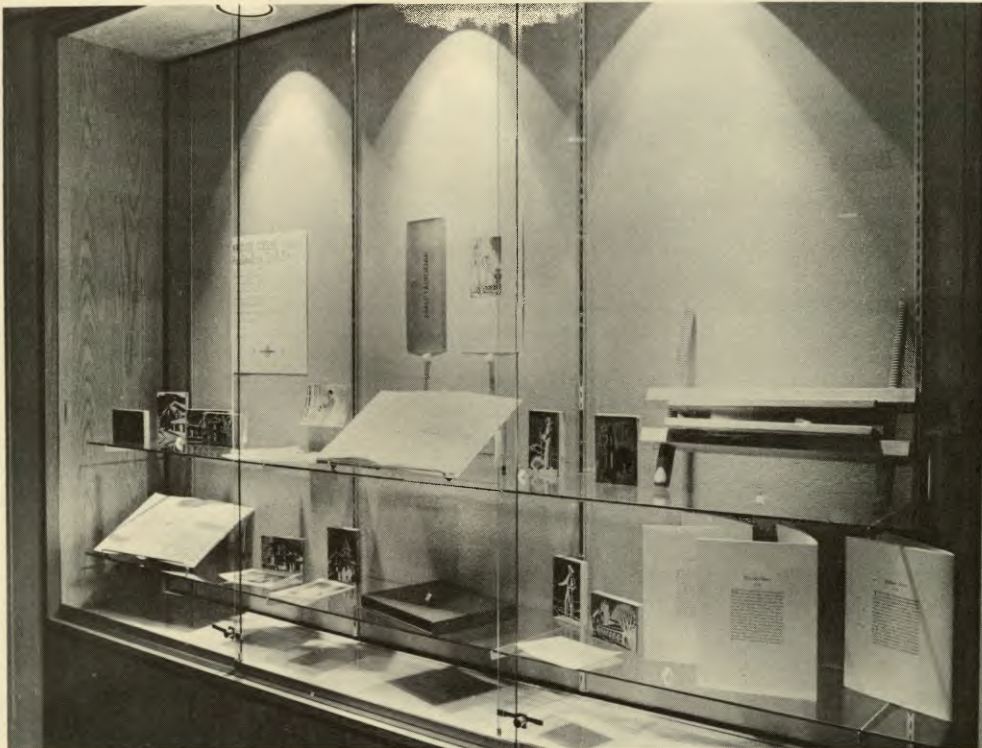
**LIBR 204 Techniques of Library Research**  
For the general student.

2 units

## PHILOSOPHY

A minor in philosophy is offered through the Department of History.

- |                |  |         |
|----------------|--|---------|
| Lower division | <b>PHIL 205 Knowledge and Being</b>  | 4 units |
|                | Features of valid thinking; the possibility, types, and instruments of knowledge, with special attention to the rationalist and empiricist traditions. |         |
|                | <b>PHIL 207 Value</b>  | 4 units |
|                | Analysis of the nature, criteria, and application of value judgments in ethics and aesthetics.   |         |
|                | <b>PHIL 208 Logic</b>  | 4 units |
|                | Analysis of principles of deductive and inductive reasoning, using methods of classical and modern logic.  |         |
| Upper division | <b>PHIL 435 Aesthetics</b>   | 4 units |
|                | Principles underlying the creation and appreciation of the fine arts, leading to a basis for evaluation of artistic expression.                        |         |











# III

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Director	ARNO KUTZNER, PH.D.
Assistant Director of Admissions	KATHRYN L. WOOD, M.A.
Assistant Registrar	NANCY M. SAGE, B.A.

### LIBRARY

Director	GEORGE V. SUMMERS, PH.D.
Associate Director	H. MAYNARD LOWRY, M.A.T., M.S.L.
Librarian	GRACE P. HOLM, M.S.
Associate Librarians	JONATHAN N. HARDT, M.S.L.S. GARY W. SHEARER, M.L.
Assistant Librarians	FRED J. ANDERSON, M.S.L.S. KATHLEEN K. DUNN, M.A. FLORENCE W. METZGER, M.S.L.S. KITTY J. MORGAN, M.L.S. VERA MAE SCHWARZ, M.S.L.S.

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### ARTS AND SCIENCES



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 HAROLD E. FAGAL, PH.D., Associate Dean  
 WILLIAM M. ALLEN, PH.D., Coordinator  
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 ANEES A. HADDAD, PH.D., Director  
 Division of Behavior Sciences  
 WILFRED M. HILLOCK, M.B.A., Coordinator  
 Professional and Applied Studies  
 FREDERICK G. HOYT, PH.D., Coordinator  
 Humanities  
 VICTOR S. GRIFFITHS, PH.D., Coordinator  
 Extension  
 DONALD E. LEE, PH.D., Director  
 Workshops

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FACULTY of the COLLEGE, with  
COLLABORATING FACULTY MEMBERS, LECTURERS, and OTHERS

Teachers holding faculty status in the College of Arts and Sciences constitute the Faculty of the College.

Some whose primary faculty appointments are in other Schools of the University are listed in departments of the College as Collaborating Faculty.

Lecturers and Assistant Instructors have teaching positions but not faculty status in the College.

All teachers listed in the departments are found in the alphabetical listing below, with the exception of adjunct and field personnel. The code letters indicate the department where information about the teacher is found.

AGRI	Agriculture	HIST	History and Political Science
ART	Art	INDS	Industrial Studies
BHAV	Division of Behavioral Sciences	MATH	Mathematics
BIOL	Biology	MDLG	Modern Languages
BSNS	Business and Economics	MUSC	Music
CHEM	Chemistry	PHYS	Physics
CNSC	Consumer Related Sciences	PSED	Physical Education
COMM	Communication	RLGN	Division of Religion
ENGL	English	SECR	Secretarial and Business Education
EHIS	Earth History		

Achord, Clifford D.	BHAV	Bobst, Richard L.	PHYS
Achord, Thaddeus C.	BHAV	Boram, C. Arnold	AGRI
Airey, Wilfred J.	HIST	Botimer, Laurence W.	CHEM
Aldrich, Nancy E.	COMM	Bower, Donald G.	INDS
Alexander, Wilber	BHAV	Bradley, Gary L.	BIOL
Allen, William M.	CHEM	Brand, Leonard R.	BIOL
Anderson, Dale L.	AGRI	Britt, E. Evelyn	COMM
Anderson, Godfrey T.	HIST	Buchheim, Paul H.	EHIS
Andreasen, Niels-Erik A.	RLGN	Bullas, Leonard R.	BIOL
Andress, Vern R.	BHAV	Burgdorff, George G.	AGRI
Andress, Monte R.	BHAV	Burke, Ruth E.	MDLG
Arendt, Kenneth A.	BIOL	Butler, Jonathan M.	HIST
Arshat, Ben D.	BHAV	Byers, Mary P.	CNSC
Baker, Charlene A.	SECR	Carr, John E.	AGRI
Barker, Matilda N.	BHAV	Case, Norman M.	BIOL
Banks, R. Richard	BHAV	Centerwall, Willard R.	BHAV
Beach, Marilyn M.	CNSC	Chadwick, Arthur V.	BIOL
Beach, Perry W.	MUSC	Chamberlain, Faye M.	SECR
Benzakein, Jacques	MDLG	Chamberlain, Theadore J.	BHAV, RLGN
Besel, Hilmer W.	MATH	Churches, Roger A.	ART
Blankenship, Charlotte A.	COMM	Clausen, Conrad D.	BIOL
Blomstedt, Herbert	MUSC	Cohen, Melvin S.	COMM



Comm, Dorothy M.	ENGL	Henry, Rolando R.	BHAV
Corey, David M.	BHAV	Herrmann, E. Clifford	CHEM
Couperus, Molleurus	BHAV	Heubach, Paul C.	BHAV
Craw, H. Allen	MUSC	Hillock, Wilfred M.	BSNS
Cushman, Lester H.	PHYS	Hilts, Margarete A.	MDLG
		Himeno, Edward T.	BHAV
Dalglish, Arthur E.	BIOL	Ho, Yuk Lin	BIOL
Damazo, Paul S.	CNSC	Holm, Melvin G.	INDS
Darnell, Robert C.	BHAV	Holmes, Ivan G.	CHEM
Davis, M. Jerry	BHAV	Holt, Lottie A.	BHAV
Dickerson, David R.	MATH	Horsley, June L.	BHAV
Dunn, Robert P.	ENGL	Howard, Carolyn R.	BHAV
Dyer, John F.	BHAV	Howe, Vernon W.	MATH
		Hoyt, Frederick G.	HIST
Eddleman, C. Douglas	BIOL		
Elias, Majeed Salim	BHAV	Jabbour, Antoine	BSNS
Elick, John W.	BHAV	Jacques, Brian J.	COMM
Elkins, Marlin E.	AGRI	Jarvis, William T.	PSED
Eroh, Agnes R.	ART	Jones, Geoffrey T.	MATH
Evans, Harrison S.	BHAV	Jordon, Carl F.	BHAV
Evard, Rene	CHEM		
		Karlow, Edwin A.	PHYS
Fagal, Harold E.	RLGN	Key, William J.	BSNS
Farmer, Bonnita M.	CNSC	Kinzer, Aubrey F.	INDS
Fattic, Grosvenor, R.	ENGL	Koorennny, Ralph L.	BSNS
Flemming, Carlyle D.	MATH	Kunihira, Shirou	BHAV
Foll, Llewellyn E.	ENGL		
Ford, Robert E.	BHAV	Landa, Paul J.	HIST, RLGN
Ford, Robert M., Jr.	BSNS	Lathrop, Earl W.	BIOL
Fraser, Ian M.	BIOL	Lecourt, Nancy H.	ENGL
		Lee, Jerry W.	BHAV
Galaway, Ronald A.	CHEM	Lessard, George M.	CHEM
Garbutt-Parralles, Ernestina F.	MDLG	Lewis, Anthony W.	BIOL
Gent, Clifton G.	INDS	Lewis, Richard B.	ENGL
Gillespie, V. Bailey	RLGN	Little, Helen F.	ENGL
Graham, Barry G.	MATH	Lowry, Jean B.	COMM
Griffiths, Victor S.	ENGL		
Grubbs, Harry M.	AGRI	Mackett, Walter C.	HIST
		Mallery, F. Lynn	RLGN
Haddad, Anees A.	BHAV	Mateer, Ervin H.	PSED
Haldeman, Madelynn J.	RLGN	Maxwell, A. Graham	BHAV
Hamerslough, Walter S.	PSED	Mazat, S. Alberta	BHAV
Hanson, Calvin J.	BSNS	McCluskey, Elwood S.	BIOL
Harris, Lester E.	BIOL	McGann, David G.	COMM
Hartley, Jack L.	COMM	McGill, Kenneth	BHAV
Harwood, Richard R.	AGRI	McKee, Lois E.	SECR
Hausler, J. Cecil	RLGN	Milliken, Harold R.	BIOL
Havens, Douglas F.	AGRI	Mitchell, Norman L.	BIOL
Henry, Michelle	CNSC	Moline, Mary S.	BHAV

Moline, S. Douglas	BHAV	Seyle, Robert H.	ART
Moore, Roberta J.	COMM	Sharpnack, Harold I.	BHAV
Morse, Merle D.	INDS	Sheldon, H. Raymond	CHEM
Mulhvihill, Clifford	BSNS	Shelden, H. Raymond II	CHEM
Murdoch, R. Eloise	CNSC	Smith, Albert E.	PHYS
		Smith, Beatrice	ENGL
Nash, Eugene W.	PSED	Sonneland, Yvonne P.	CNSC
Nelson, J. Michael	BHAV	Specht, Walter F.	RLGN
Niswonger, Jerome W. H.	BHAV	Stevens, Neal G.	INDS
Nutter, Robert L.	BIOL	Stirling, James H.	BHAV
		Stout, Lanny R.	BSNS
Olsen, Anita N.	MUSC	Stretter, Robert S.	COMM
Osborne, David D.	RLGN	Strutz, Peter G.	BHAV
Osborne, Judy E.	CNSC		
Osbourn, Fred H.	BHAV	Teel, Charles W., Jr.	BHAV, RLGN
Osmunson, Robert L.	RLGN	Teele, Marilyn C.	ENGL
Ozaki, Mamie M.	BHAV	Thomas, Nelson E.	PSED
		Thurber, Donald W.	MUSC
Petersen, Richard L.	AGRI	Turner, L. Janene	PSED
Phillips, Harold R.	BSNS		
Presha, Joseph S.	BHAV	Uthe, Robert C.	MUSC
Pride, L. Frances	BHAV		
Provonsha, Jack W.	BHAV	Vaughn, Donald	MUSC
		Velez, Juan R.	MDLG
Reeves, John M.	BHAV	Vine, Kenneth L.	BHAV, RLGN
Rhynus, Edith M.	CNSC	von Pohle, Vernon L.	INDS
Rice, Gail T.	CNSC		
Rice, T. Richard	RLGN	Wagner, Edward D.	BIOL
Rich, Myrle E.	PSED	Walls, Arthur M.	INDS
Riffel, Hugo	BHAV	Wear, Elizabeth Ann	CNSC
Riggs, James W., Jr.	PHYS	Webster, Clyde L.	CHEM
Riley, W. Fred	AGRI	Weismeyer, Helen I.	PSED
Robbins, Joann R.	MUSC	West, Evaline E.	BHAV
Robertson, John J.	RLGN	Widmer, Elmer A.	BIOL
Roesel, Paul W.	CNSC	Willcocks, David V.	MUSC
Rosario, Carolann S.	BIOL	Wilson, Leland Y.	CHEM
Ross, Delmer G.	HIST	Winter, Charles E.	BIOL
Ross, Gary M.	HIST	Woods, Adeny S.	BHAV
Roth, Ariel A.	BIOL	Wuchenich, Danielle	BHAV
Rowley, Rodney R.	COMM		
Ruf, Kathleen M.	CNSC	Yoon, Won K.	BHAV
Ryckman, Raymond E.	BIOL		
		Zaugg, Wayne E.	CHEM
Schneider, Robert K.	PSED	Zolber, Kathleen K.	CNSC
Schultz, Robert L.	BIOL		

Certain persons retain faculty status in the College even though they are not currently teaching and are therefore not listed in the departments. These include former teachers who have been designated emeritus faculty by the Board of Trustees and those who have been appointed to other positions of service to the University.

ALONZO L. BAKER, Emeritus Professor of Political Science  
PH.D. University of Southern California

STANLEY BULL, Emeritus Professor of Psychology  
PH.D. University of Michigan

H. RUSSELL EMMERSON, Emeritus Professor of Architectural Engineering  
B.E. University of Southern California

JOHN T. HAMILTON, Associate Professor of Music  
M.MUS. Northwestern University

HAROLD B. HANNUM, Emeritus Professor of Music  
M.MUS. Northwestern University

MAYBEL V. JENSEN, Emeritus Professor of Special Education  
M.A. University of Southern California

WILLIAM M. LANDEEN, Emeritus Professor of History  
PH.D. University of Michigan

DONALD E. LEE, Associate Professor of Physics  
PH.D. New York University

THOMAS A. LITTLE, Emeritus Professor of English  
PH.D. University of Nebraska

GEORGE G. O'BRIEN, Professor of Mathematics  
PH.D. University of Maryland

V. NORSKOV OLSEN, Professor of Church History  
PH.D. University of London  
DR. THEOL. University of Basel

NORVAL F. PEASE, Emeritus Professor of Applied Theology  
PH.D. Michigan State University





## ALUMNI FEDERATION

The Alumni Federation was organized in 1958. This organization provides an avenue by which the several alumni associations, distinctive of emphasis represented by curriculums of the University, join their common concern for the continued welfare of the institution. In turn, through the Federation the University demonstrates its interest in the continued general and professional development of the alumni, whom it regards as the ultimate and true expression of its accomplishments.

By united and reciprocal interaction, the Alumni and the University seek to ensure a growing community of scholars, practitioners, and citizens dedicated to excellence. Vitally concerned with excellence in education, the Federation lends itself to enlarging the sphere of influence for good envisioned by the founders of the University.

The Federation seeks to foster unity and loyalty and to promote the growth of the total institution and at the same time the best interests of each part. The Federation endeavors —

1. To foster the natural bond among alumni of each individual school, maintaining the right of alumni to direct their own group activities.
2. To assist the University and its schools in their duty to provide for the continuing general welfare of all students, faculty, and alumni.
3. To encourage alumni, through constituent associations, to assist in providing adequate and dependable financial support both for the University and for alumni activities.



## ACCREDITATION

### The University

**THE UNIVERSITY:** Founded as College of Evangelists 1905-06. Chartered as College of Medical Evangelists by the state of California December 13, 1909. Accredited by Northwest Association of Secondary and Higher Schools April 7, 1937. Accredited by Western Associations of Schools and Colleges (prior to January 1962, Western College Association) February 24, 1960. Became Loma Linda University July 1, 1961. Professional curriculums started and approved as indicated.

**ARTS AND SCIENCES:** Founded in 1922 as La Sierra Academy, a secondary school; in 1927 became Southern California Junior College; in 1946 was accredited as the four-year La Sierra College; in 1967 became College of Arts and Sciences of the University.

**THE GRADUATE SCHOOL:** Started in 1954. Accredited through University accreditation.

### The professions

**DENTAL HYGIENE:** Started in 1959. Approved by the Council on Dental Education of the American Dental Association since September 7, 1961.

**DENTISTRY:** Started in 1953. Approved by the Council on Dental Education of the American Dental Association since May 23, 1957.

**DIETETICS:** Certificate program started in 1922; baccalaureate degree conferred 1932-54; graduate program offered since 1954. Internship program continuously approved by American Dietetic Association since October 1957; reestablishment of baccalaureate program authorized October 1971.

**EDUCATION:** School of Education organized in 1968 and approved by the California State Board of Education June 12, 1969.

**HEALTH:** Started in 1948; reorganized in 1964. Approved by the American Public Health Association June 23, 1967.

**MEDICAL RECORD ADMINISTRATION:** Started in 1963. Approved by the Council on Medical Education of the American Medical Association since December 1, 1963.

**MEDICAL TECHNOLOGY:** Started in 1937. Approved by the Council on Medical Education of the American Medical Association since August 28, 1937.

**MEDICINE:** Started in 1909. Approved by the Association of American Medical Colleges and the Council on Medical Education of the American Medical Association since November 16, 1922.

**NURSING:** Hospital school started at Loma Linda in 1905. Hospital school added at Los Angeles in 1924. Degree school organized in 1948. Accredited by the National Nursing Accrediting Service December 10, 1951, with approval continuing under the National League for Nursing. Initial 1917 approval of California State Board of Health extended until college program approved July 1, 1952, by the California Board of Registered Nursing. California Board of Registered Nursing approval since 1952. Public Health Nursing preparation recognized 1959.

**OCCUPATIONAL THERAPY:** Started in 1959. Initial approval by the American Occupational Therapy Association and the Council on Medical Education of the American Medical Association June 10, 1960. Full approval March 30, 1962.

**PHYSICAL THERAPY:** Started in 1941. Initial approval by the Council on Medical Education of the American Medical Association June 6, 1942. Reapproved by the Council and by the American Physical Therapy Association February 3, 1961.

**RADIOLOGICAL TECHNOLOGY:** Started in 1941. Approved by the Council on Medical Education of the American Medical Association since November 19, 1944.



## INSTRUCTIONAL RESOURCES

**LIBRARIES** The University has two main libraries (one on the Loma Linda campus and one on the La Sierra campus), and the joint holdings are as follows:

Books, bound periodicals, audiovisual materials	470,375
Current periodical subscriptions	3,821

Bus service is supplied on schedule each weekday between the two campus libraries so that students and faculty can have access to both libraries. Immediate information can be obtained and lending arrangements made by telephone or mail.

Materials that are not available in either campus library or in the immediate community are obtainable through interlibrary loan. At Loma Linda the teletypewriter (TWX) can be used for interlibrary communication. This equipment can also provide teachers and graduate students computer-printed bibliographies on medical-related subjects through the Medline and services in which the Loma Linda library participates.

La Sierra campus	Books, bound periodicals, audiovisual materials	172,840
	Current periodical subscriptions	1,093

The La Sierra campus library is a general liberal arts collection, with concentrations in history, religion, English, and education. A collection of nineteenth-century Seventh-day Adventist books and pamphlets is in the Heritage Collection. In addition to the microfiche Library of American Civilization already purchased (21,000 titles), the library is augmenting microform holdings.

Loma Linda campus	Books and bound periodicals	297,535
	Current periodical subscriptions	2,728

The acquisitions of the Vernier Radcliffe Memorial Library on the Loma Linda campus are in medicine, dentistry, allied health professions, and graduate programs; and included in the acquisitions is a liberal arts undergraduate collection in support of certain graduate and professional programs. About half of the resources are in medical and related fields. Some rare materials in the history of medicine are included in the holdings.

Since 1957 this library has been the official west coast depository for Seventh-day Adventist literature regularly provided by church publishing houses in North America. The publications are in the Heritage Collection established in 1971. Here also are the Ellen G. White source materials, University archives, and an in-process collection of published and unpublished works pertaining to the early Adventist Movement.

The Human Relations Area Files on microfiche make available primary source materials on most of the known cultures of the world.

**Consortium** The following colleges and universities have formed a consortium under the name Inland Empire Academic Library Cooperative to give full borrowing privileges to students and faculty members of the following institutions:

Azusa Pacific College, Azusa  
 California Baptist College, Riverside  
 California State College, San Bernardino  
 California State Polytechnic University, Pomona  
 La Verne College, La Verne  
 Loma Linda University, Loma Linda/La Sierra campuses  
 University of California, Riverside  
 University of Redlands, Redlands  
 Community colleges in the area



#### Community

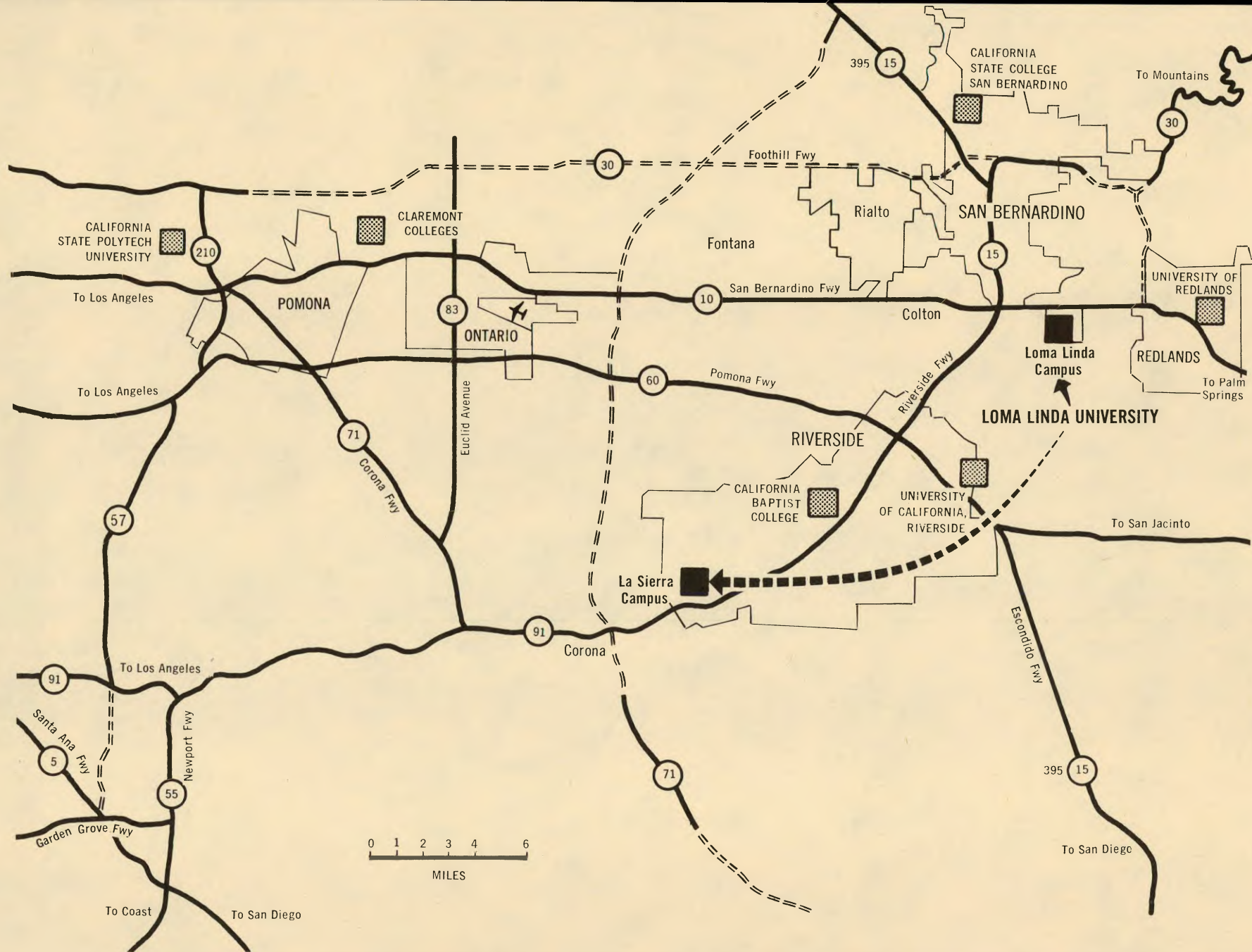
Within driving distance of the University campuses are other collections accessible to faculty and students: the University of California (Los Angeles and Irvine campuses), the University of Southern California, the Los Angeles public library, the inland area public libraries, and the unique holdings of the Henry E. Huntington Library and Art Gallery.

#### INSTRUCTIONAL COMPUTER LA SIERRA CAMPUS

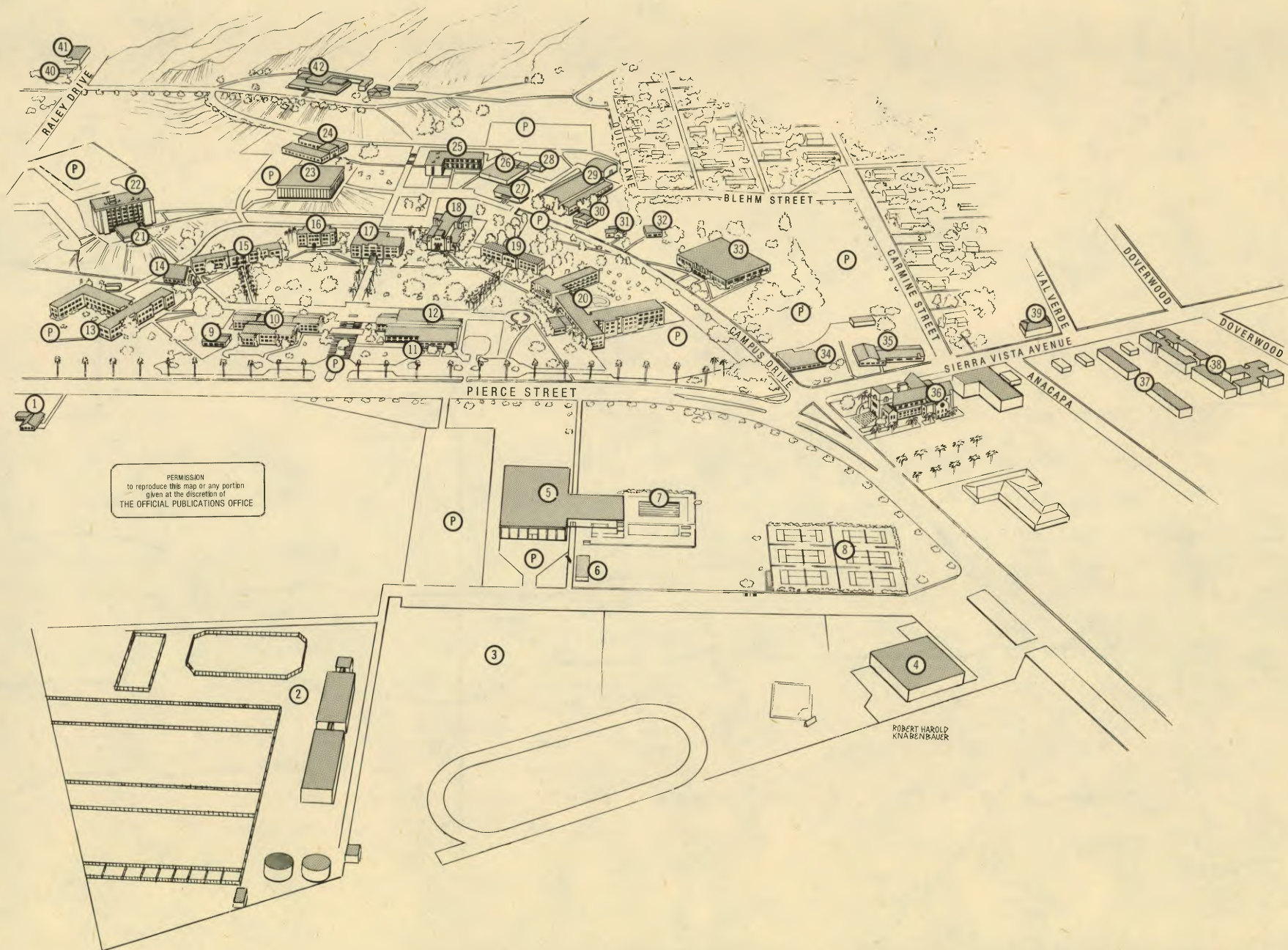
The College of Arts and Sciences, in cooperation with the School of Education and the University Libraries, maintains an instructional computer system on the La Sierra campus. It is available without cost and easily accessible to Loma Linda University faculty, staff, and students for various educational activities. The system serves as a laboratory for the computer science major program and for classes in computer programming. The user has access to the system through any one of a dozen terminals in various buildings on campus. These terminals are as easy to use as a typewriter. The user essentially carries on a dialogue with the computer. The system's time-sharing capabilities permit several persons to use the computer simultaneously. The file processing system permits easy storage and retrieval of programs and data. An inexperienced user can easily do significant problem solving because the system software was designed with the novice in mind. The programming language – BASIC-PLUS – has the simplicity of the original Dartmouth college BASIC but is enhanced with many specialized features. These features provide the experienced user with a sophisticated tool for solving advanced problems. The computer is a PDP 11/40, manufactured by Digital Equipment Corporation (similar to those recently installed on the 19 campuses of the California State College system). The expandable system now is equipped with industry-compatible tape and disc drives, a plotter, and a document reader.

#### COMPUTER LOMA LINDA CAMPUS

The Biomathematics Department maintains an extensive computer complex serving students and faculty in both academic and scientific functions. The facility consists of two major resources, both located in the Medical Center. The Scientific Computation Facility is organized to accommodate the research function; Biomathematics Computing Services caters to the computer-related instructional needs of the University. Available facilities span the range from small-scale to large-scale systems. Particular emphasis has been given to providing real-time data acquisition and graphical output capabilities. An advanced and very powerful computing system has recently been installed to facilitate the modeling and simulation of complex systems. Programming aids are available to expedite the man-machine dialogue and to assist in applying the computer to the solution of problems in a variety of disciplines. An extensive program library serves many routine needs: but researchers are encouraged to write their own specialized programs for their own particular needs. Programming instruction and assistance are provided for this purpose.









## LA SIERRA CAMPUS MAP

### NUMERICAL LEGEND

- 1 Agriculture
- 2 Dopp Equestrian Center
- 3 Recreation fields
- 4 College Market / Bookstore
- 5 Alumni Pavilion / Gymnasium
- 6 Physical Education office
- 7 Swimming pool
- 8 Tennis courts
- 9 Security
- 10 Administration
- 11 Student Center
- 12 The Commons / Food Service
- 13 Calkins Hall: men
- 14 Matheson Chapel
- 15 South Hall: women
- 16 San Fernando Hall: Physics
- 17 La Sierra Hall: Counseling / Education / English / History and Political Science / Mathematics / Modern Languages / Religion
- 18 Hole Memorial Hall: Auditorium / Music / Education / Testing
- 19 Gladwyn Hall: women
- 20 Angwin Hall: women
- 21 Meier Chapel
- 22 Sierra Towers: men
- 23 The Library
- 24 Ambs Hall: Industrial Studies
- 25 Consumer Related Sciences
- 26 Communication / KLLU / Nursing
- 27 Art
- 28 Nursing
- 29 Industrial building
- 30 Mail Service / Custodial Service
- 31 Health Service
- 32 Animal quarters
- 33 Palmer Hall: Biology / Chemistry / World Museum of Natural History
- 34 Behavioral Sciences
- 35 Sierra Vista Chapel / Welfare Center

- 36 La Sierra Church
- 37 Walnut Grove Apartments
- 38 Sierra Vista Apartments
- 39 Sierra Vista House
- 40 Rhoads House
- 41 Raley House
- 42 Physical Plant Services Department / Receiving

### ALPHABETICAL LEGEND

- Academic Affairs VP, 10  
 Accounting Service, 10  
 Administration, 10  
 Admissions and Records, 10  
 Agriculture, 1  
 Alumni Affairs, 10  
 Alumni Pavilion, 5  
 Ambs Hall, 24  
 Angwin Hall: women, 20  
 Animal quarters, 32  
 Anthropology, 34  
 Art, 27  
 Arts and Sciences, College of, 10  
 Audiovisual Service, 23  
 Behavioral Sciences, 34  
 Biology, 33  
 Bookstore, Campus, 4  
 Business and Economics, 10  
 Business office, 10  
 Cafeteria, 12  
 Calkins Hall: men, 13  
 Chemistry, 33  
 Church, La Sierra, 36

- College of Arts and Sciences, 10  
 Commons, The, 12  
 Communication, 26  
 Consumer Related Sciences, 25  
 Counseling Center, 17  
 Custodial Service, 30  
 Dean of Students, 10  
 Development VP, 10

- Education, School of, 17  
 Employment, student, 10  
 English, 17  
 Equestrian center, 2

- Financial Affairs VP, 10  
 Food Service, 12

- Gladwyn Hall: women, 19  
 Graduate School, 10  
 Gymnasium, 5

- Health Service, 31  
 History and Political Science, 17  
 Hole Memorial Hall, 18

- Industrial building, 29  
 Industrial Studies, 24  
 Information, Public, 10

- KLLU, 26

- La Sierra Church, 36  
 La Sierra Hall, 17  
 Library, The, 23

- Mail Service, 30  
 Maintenance, 42  
 Market, College, 4  
 Mathematics, 17  
 Matheson Chapel, 14  
 Media Services, 23  
 Meier Chapel, 21  
 Men's residences, 13, 22, 40, 41  
 Modern Languages, 17  
 Museum, 33  
 Music, 18

- News, Public Information, 10  
 Nursing, associate degree, 28

- Palmer Hall, 33  
 Payroll, 10  
 Personnel, 10  
 Physical Education, 6  
 Physical Plant Services Department, 42  
 Physics, 16  
 President, University, 10  
 Psychology, 34  
 Public Relations VP, 10  
 Purchasing, 10

- Raley House, 41  
 Receiving, 42  
 Recreation fields, 3  
 Recruitment, 10  
 Religion, 17  
 Rhoads House, 40

- Safety, 10  
 San Fernando Hall, 16  
 School of Education, 17  
 Secretarial and Business Education, 10  
 Security, 9  
 Sierra Towers: men, 22  
 Sierra Vista Apartments, 38  
 Sierra Vista Chapel, 35  
 Sierra Vista House, 39  
 Sociology, 34  
 South Hall: women, 15  
 Student Affairs VP, 10  
 Student Aid and Loans, 10  
 Student Center, 11  
 Student employment, 10  
 Student Finance, 10  
 Swimming pool, 7

- Tennis courts, 8  
 Testing, 18

- Walnut Grove Apartments, 37  
 Welfare Center, 35  
 Women's residences: 15, 19, 20, 38, 39  
 World Museum of Natural History, 33

## INDEX

- Academic practices, 23
- Acceptance, 18
- Accreditation, 5, 190
- Adding a course, 22
- Administration, College, 16, 184
- Administration of Justice, 14, 59, 63, 64
- Administration, La Sierra campus, 182
- Administration, University, 181
- Admission information, 18, 21
- Admission of freshmen, 19
- Advanced placement, 20
- Advance payment, 27
- Adventist Colleges Abroad, 16
- Agriculture, 13, 50
- Aid, financial, 33
- Alumni Federation, 189
- Anthropology, 13, 59, 67
- Application and acceptance, 18
- Applied studies, 12
- Art, 13, 55
- Associate degree programs, 12, 13, 14, 15, 46
- Associate in Arts, 12, 14, 46
- Associate in Science, 12, 13, 14, 46
- Attendance, 22
- Audit, 24, 29
- Awards, 34, 35, 36
- Baccalaureate degree programs, 12, 13, 14, 15, 44
- Bachelor of Arts, 12, 13, 14, 44
- Bachelor of Music, 12, 14, 44
- Bachelor of Science, 12, 13, 14, 15, 44
- Bank, student, 27
- Behavioral Science, Division of, 13, 59
- Biology, 13, 80
- Budget for financial aid, 33, 37
- Business, Economics, 13, 89
- Business Education, 14, 172
- Business hours, 2, 27
- Calendar, 6
- Cars, 39
- Cash needs, 27, 30
- Certificate programs, 12, 13, 15, 47
- Change of program, 22
- Charges, 29, 30
- Checks, 27
- Chemistry, 13, 95
- Classification of courses, 48
- Class standing, 24
- Clubs, 40
- Code letters, 48
- College of Arts and Sciences, 184
- Committees, 16, 183, 184
- Communication, 13, 99
- Computer System, 192
- Consumer Related Sciences, 13, 108
- Correspondence course, 23
- Counseling service, 38
- Course changes, 22, 31
- Course classification, 48
- Course load, 23, 31
- Course numbering, 49
- Courses, repeated, 23
- Coursework, special, 23
- Credit by examination, 25
- Credit, unit of, 23
- Curriculums, 12, 13, 14, 15
- Deadlines, application, 18, 32, 33
- Deadlines, withdrawal, 22
- Degree requirements, 44
- Departments of instruction, 13, 48
- Deposit, room, 27, 28, 29, 31
- Directory, 181
- Doctoral degree, 15
- Dropping a course, 22, 31
- Earth History, 81
- Earth Science, 176
- Educational philosophy, 9, 11, 12
- Employment, 32, 33
- English, 13, 116
- Entrance requirements, 19
- Entrance tests, 20
- Examination, proficiency, 25
- Examination, waiver, 25
- Exchange students, 21
- Expenses, 29, 30
- Extension coursework, 23
- Faculty, 185
- Federal aid programs, 34
- Fees, 29, 30
- Financial aid, 33, 34, 35, 36
- Financial clearance, 29
- Financial information, 27
- Flat charge, 29, 30
- Foreign students, 21, 28
- General requirements, 43
- Grades, optional, 24
- Grading system, 24
- Graduate programs, 15
- Graduation ceremonies, 26, 27
- Graduation requirements, 43
- Graduation with honors, 25
- Grants, 35
- Handbook, student, 40
- Health insurance, 28, 39
- Health service, 39
- History and information, University, 5
- History, College, 11
- History, Political Science, 14, 120
- Honors, 25
- Identification number, 38



- Incomplete, 24
- Independent study, 23
- Industrial Studies, 14, 120, 127
- Information, College, 198
- Information, University, 38, 199
- Instructional resources, 191
- Insurance, health, 28, 39
- Interdepartmental courses, 176
- International students, 21, 28
- Interest rate, 29
  
- Liberal education, 12
- Libraries, 191
- Library Science, 178
- Load, course, 23, 31
- Loans, 32, 34, 35, 36
- Lower division standing, 24
  
- Major programs, 13, 14
- Maps, 193, 194, 195
- Marriage and Family Counseling, 63, 65, 70
- Master's degree, 15
- Mathematics, 14, 133
- Meal plan, 29, 30
- Middle Eastern Studies, 61, 71
- Modern Languages, 14, 138
- Music, 14, 145
- Music charges, 30
  
- Numbering of courses, 49
- NC option, 24
  
- Objectives, 11
- Organizations, student, 40
- Overseas students, 21, 28
  
- Payment, advance, 27
- Payment plans, 32
- Philosophy, 120, 178
- Philosophy, College, 11
- Philosophy, University, 9
- Physical Education, 14, 152
- Physical examination, 19
- Physical fitness, 39
- Physics, 14, 158
- Political Science, 14, 120
- Postbaccalaureate programs, 15
- Practices, academic, 22
- Preprofessional programs, 15
- Prerequisites, freshmen, 19
- Probation, academic, 25
- Proficiency examination, 25
- Program change, 22, 31
- Programs, major, 13, 14
- Property protection, 39
- Provisional admission, 19, 22
- Psychology, 14, 61, 65, 71
  
- Reentrance, 20
- Refunds, 31
- Registration, 22
- Registration classifications, 22
- Registration procedure, 22
- Regular student, 19, 22
- Religion, 14, 62
- Requirements for degrees, 44
- Residence change, 31
- Room deposit, 27, 28, 29, 31
  
- Scholarships and awards, 35, 36
- Scholastic probation, 25
- Scholastic standings, 24
- Secretarial, Business Education, 14, 172
- Secondary school credits, 19
- Social Work, 14, 62, 63, 64, 76
- Sociology, Anthropology, 13, 59, 63, 66, 78
- S option, 24
- Special charges, 30
- Specialist degree, 15
- Special student, 22
- Student affairs, 38
- Student aid, 29, 33
- Student bank, 27
- Student classification, 24
- Student handbook, 40
- Student organizations, 40
- Student responsibility, 38
- Student welfare, 38
- Study load, 23, 31
- Subject code letters, 48
  
- Tests, entrance, 20
- Tithe, 33
- Transcript of credit, 26, 29
- Transfer credit, 20
- Transfer students, 20
- Transportation, 39
- Trustees, 181
- Tuition, 29, 30
- Two-year programs, 12, 13, 14, 46
  
- Undergraduate class standing, 24
- Unit charge, 29, 30
- University, 5, 9
- Upper division standing, 24
  
- Veterans, 21, 28
- Visa, student, 21
  
- Waiver examination, 25
- Withdrawal, 22, 31
- Worship, 39
  
- Year abroad, 16



THE COLLEGE OF ARTS AND SCIENCES

By telephone

## SERVICES

785-2102	Alumni Affairs
785-2025	Angwin Hall (women's residence)
785-2005	Associated Students
785-2182	Bookstore
785-2002	Business Administrator
785-2124	Calkins Hall (men's residence)
785-2081	Chaplain
785-2011	Counseling Service

785-2227	Dean of Men
785-2166	Dean of Women
785-2147	Employment Information
785-2214	Extension
785-2251	Financial Aid
785-2138	Food Service
785-2031	Gladwyn Hall (women's residence)
785-2100	Housing
785-2100	Immigration
785-2288	KLLU Radio
785-2044	Library
785-2237	Placement
785-2022	Public Relations
785-2229	Sierra Towers (men's residence)
785-2130	South Hall (women's residence)
785-2006	Veterans' Information

785-2204	Agriculture
785-2170	Art
785-2105	Biology
785-2060	Business and Economics
785-2148	Chemistry
785-2157	Communication
785-2146	Consumer Related Sciences
785-2241	English
785-2067	History and Political Science
785-2218	Industrial Studies
785-2506	Mathematics
785-2055	Modern Languages
785-2037	Music
785-2160	Nursing
785-2084	Physical Education, Health and Recreation
785-2136	Physics
785-2017	Psychology
785-2041	Religion
785-2039	Secretarial and Business Education
785-2424	Social Work
785-2192	Sociology and Anthropology

## UNIVERSITY INFORMATION

Both campuses    General University interests  
                          Admission  
                          Student welfare, housing, visas  
                          Student finance  
                          Records

The President  
 Admissions Office  
 Student Affairs Office  
 Student Aid and Finance Office  
 Office of Admissions and Records

La Sierra campus    MAIL: Riverside  
                                  California 92515  
                          College of Arts and Sciences  
                          School of Education

TELEPHONE (area 714):  
                          Riverside  
 Dean    785-2210  
 Dean    785-2266

Loma Linda campus    MAIL: Loma Linda  
                                  California 92350

TELEPHONE (area 714):  
                          796-7311    Redlands  
                          824-0800    San Bernardino  
                          824-0800    Riverside

School of Allied Health Professions  
 ANESTHESIA  
 DIETETICS  
 MEDICAL RECORD ADMINISTRATION  
 MEDICAL TECHNOLOGY  
 OCCUPATIONAL THERAPY  
 PHYSICAL THERAPY  
 PUBLIC HEALTH SCIENCE  
 RADIOLOGICAL TECHNOLOGY  
 RESPIRATORY THERAPY

Dean

School of Dentistry  
 DENTISTRY  
 DENTAL HYGIENE  
 DENTAL ASSISTING

Dean

School of Health

Dean

School of Medicine

Dean

School of Nursing

Dean

Division of Religion

Dean

The Graduate School

Dean

